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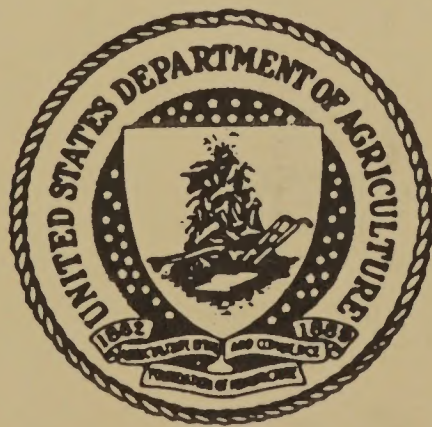
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**U.S. DEPARTMENT OF AGRICULTURE**

**Federal Grain Inspection Service  
Inspection Division**

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**THE  
OFFICIAL UNITED STATES  
STANDARDS FOR GRAIN**



**JANUARY 1978**



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### FURTHER INFORMATION

For further information regarding the Official United States Standards for Grain, apply to the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture.

Revised January 1978

NOTE: Some factor percentages and test weights per bushel in these standards have been changed to read whole and tenths (e.g., 5.0). This editing provides uniformity in printing between different grains and reflects the desired degree of accuracy of the standards.

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# UNITED STATES STANDARDS FOR WHEAT<sup>1</sup>

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## Terms Defined

### § 26.301 Definition of wheat.

CATALOGING = PREP.

The grain of common wheat (*Triticum aestivum* L.), club wheat (*T. compactum* Host), and durum wheat (*T. durum* Desf.) which, before the removal of the dockage, consists of 50 percent or more of one or more of these wheats and not more than 10 percent of other grains for which standards have been established under the United States Grain Standards Act and which, after the removal of the dockage, contains 50 percent or more of whole kernels of one or more of these wheats. Wheat shall be divided into the following seven classes: Hard Red Spring Wheat, Durum Wheat, Hard Red Winter Wheat, Soft Red Winter Wheat, White Wheat, Unclassed Wheat, and Mixed Wheat.

(a) **Hard Red Spring Wheat.** All varieties of hard red spring wheat. This class shall be divided into the following three subclasses:

(1) **Dark Northern Spring Wheat.** Hard red spring wheat with 75 percent or more of dark, hard, and vitreous kernels.

(2) **Northern Spring Wheat.** Hard red spring wheat with 25 percent or more but less than 75 percent of dark, hard, and vitreous kernels.

(3) **Red Spring Wheat.** Hard red spring wheat with less than 25 percent of dark, hard, and vitreous kernels.

(b) **Durum Wheat.** All varieties of wheat (amber) durum wheat. This class shall be divided into the following three subclasses:

(1) **Hard Amber Durum Wheat.** Durum wheat with 75 percent or more of hard and vitreous kernels of amber color.

(2) **Amber Durum Wheat.** Durum wheat with 60 percent or more but less than 75 percent of hard and vitreous kernels of amber color.

(3) **Durum Wheat.** Durum wheat with less than 60 percent of hard and vitreous kernels of amber color.

(c) **Hard Red Winter Wheat.** All varieties of hard red winter wheat. There are no subclasses in this class.

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<sup>1</sup>Compliance with the provisions of these standards does not excuse failure to comply with the provision of the Federal Food, Drug, and Cosmetic Act, or other Federal laws.



(d) **Soft Red Winter Wheat.** All varieties of soft red winter wheat. There are no subclasses in this class.

(e) **White Wheat.** All varieties of white wheat. This class shall be divided into the following four subclasses:

(1) **Hard White Wheat.** White wheat with 75 percent or more of hard kernels. It may contain not more than 10 percent of white club wheat.

(2) **Soft White Wheat.** White wheat with less than 75 percent of hard kernels. It may contain not more than 10 percent of white club wheat.

(3) **White Club Wheat.** White club wheat containing not more than 10 percent of other white wheat.

(4) **Western White Wheat.** White wheat containing more than 10 percent of white club wheat and more than 10 percent of other white wheat.

(f) **Unclassed Wheat.** Any variety of wheat which is not classifiable under other criteria provided in the wheat standards. There are no subclasses in this class. This class shall include:

(1) Red durum wheat.

(2) Any wheat which is other than red or white in color.

(g) **Mixed Wheat.** Any mixture of wheat which consists of less than 90 percent of one class and more than 10 percent of one other class, or a combination of classes which meets the definition of wheat.

## § 26.302 Definition of other terms.

For the purpose of these standards, the following terms shall have the meanings stated below:

(a) Contrasting classes shall be:

(1) Durum Wheat, White Wheat, and Unclassed Wheat in the classes Hard Red Spring Wheat and Hard Red Winter Wheat.

(2) Hard Red Spring Wheat, Hard Red Winter Wheat, Soft Red Winter Wheat, White Wheat, and Unclassed Wheat in the class Durum Wheat.

(3) Durum Wheat and Unclassed Wheat in the class Soft Red Winter Wheat.

(4) Hard Red Spring Wheat, Durum Wheat, Hard Red Winter Wheat, and Unclassed Wheat in the class White Wheat.

(b) **Damaged kernels.** Kernels, pieces of wheat kernels, and other grains that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged, or otherwise materially damaged, in the sample after the removal of dockage and shrunken and broken kernels.

(c) **Defects.** Damaged kernels, foreign materials, and shrunken and broken kernels. The sum of these three factors



may not exceed the limit for the factor "Defects (total)" for each numerical grade.

**(d) Distinctly low quality.** Wheat which is obviously of inferior quality because it contains foreign substances or because it is in an unusual state or condition, and which cannot be graded properly by use of the other grading factors provided in the standards. Distinctly low quality shall include any objects too large to enter the sampling device; i.e., large stones, wreckage, etc.

**(e) Dockage.** All matter other than wheat which can be removed readily from a test portion of the original sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual.<sup>2</sup> Also, underdeveloped, shriveled, and small pieces of wheat kernels removed in properly separating the material other than wheat and which cannot be recovered by properly rescreening or recleaning. (See also § 26.305 and § 26.307.) For the purpose of this paragraph, "approved device" shall include the Carter Dockage Tester and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

**(f) Foreign material.** All matter other than wheat which remains in the sample after the removal of dockage and shrunken and broken kernels.

**(g) Heat-damaged kernels.** Kernels, pieces of wheat kernels, and other grains that are materially discolored and damaged by heat which remain in the sample after the removal of dockage and shrunken and broken kernels.

**(h) Moisture.** Water content in wheat as determined by an approved device in accordance with procedures prescribed in the Equipment Manual.<sup>2</sup> For the purpose of this paragraph, "approved device" shall include the Motomco Moisture Meter and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

**(i) Other grains.** Barley, corn, cultivated buckwheat, einkorn, emmer, flaxseed, guar, hull-less barley, nongrain sorghum, oats, Polish wheat popcorn, poulard wheat, rice, rye,

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<sup>2</sup>The following publications are referenced in these standards. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

(a) Equipment Manual, Gr Instruction 916-6, effective September 25, 1968, as amended, U.S. Department of Agriculture, Agricultural Marketing Service.

(b) Grain Inspection Manual, GR Instruction 918-6, effective August 28, 1972, as amended, U.S. Department of Agriculture, Agricultural Marketing Service.



safflower, sorghum, soybeans, spelt, sunflower, sweet corn, triticale, and wild oats.

**(j) Shrunken and broken kernels.** All matter which can be removed from a test portion of the dockage-free sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual.<sup>2</sup> For the purpose of this paragraph, "approved device" shall be the 0.064 x  $\frac{3}{8}$  oblong-hole sieve.<sup>3</sup>

**(k) Sieve. 0.064 x  $\frac{3}{8}$  oblong-hole.** A metal sieve 0.032 inch thick with oblong perforations 0.064 inch by 0.375 ( $\frac{3}{8}$ ) inch.

**(l) Stones.** Concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

**(m) Test weight per bushel.** The weight per Winchester bushel (2,150.42 cubic-inch capacity) as determined on a dockage free test portion of the original sample using an approved device in accordance with instructions in the Grain Inspection Manual.<sup>2</sup> Test weight per bushel shall be expressed to the nearest tenth of a pound. For the purpose of this paragraph, "approved device" shall include the Fair-banks-Morse or Ohaus Test Weight Per Bushel Apparatus and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

## Principles Governing Applications of Standards

### § 26.303 Basis of determination.

**(a) Distinctly low quality.** The determination of distinctly low quality shall be made on the basis of the lot as a whole at the time of sampling when a condition exists that may not appear in the representative sample and/or the sample as a whole.

**(b) Certain Quality determinations.** Each determination of rodent pellets, bird droppings, other animal filth, broken glass, castor beans, crotalaria seeds, dockage, garlic, live weevils or other insects injurious to stored grain, moisture, odor, temperature, an unknown foreign substance, and a commonly recognized harmful or toxic substances shall be upon the basis of the sample as a whole.

**(c) All other determinations.** All other determinations shall be upon the basis of the grain when free from dockage;

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<sup>3</sup>Requests for information concerning approved devices and procedures, criteria for approved devices, and request for approval of devices should be directed to the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.



except that the determination of heat-damaged kernels, damaged kernels (total), and foreign material shall be upon the basis of the grain when free from dockage and shrunken and broken kernels.

#### **§ 26.304 Temporary modifications in equipment and procedures.**

The equipment and procedures referred to in the wheat standards are applicable to wheat produced and harvested under normal environmental conditions. Abnormal environmental conditions during the production and harvest of wheat may require minor temporary modifications in the equipment or procedures to obtain results expected under normal conditions. When these adjustments are necessary, Inspection Division Field Offices, official inspection agencies, and interested parties in the grain trade will be notified promptly in writing of the modification. Adjustments in interpretations (i.e., identity, class, quality, and condition) are excluded and shall not be made.

#### **§ 26.305 Percentages.**

(a) Percentages shall be determined on the basis of weight and shall be rounded off as follows:

(1) When the figure to be rounded is followed by a figure greater than 5, round to the next higher figure; e.g., state 0.46 as 0.5.

(2) When the figure to be rounded is followed by a figure less than 5, retain the figure e.g., state 0.54 as 0.5.

(3) When the figure to be rounded is even and is followed by the figure 5, retain the even figure. When the figure to be rounded is odd and is followed by the figure 5, round the figure to the next higher number; e.g., state 0.45 as 0.4; state 0.55 as 0.6.

(b) Percentages shall be stated in whole and tenth percent to the nearest tenth percent, except when determining the identity of wheat, the class, the subclass, and the percentage of dockage and/or ergot. The percentage when determining the identity of wheat, the class, and the subclass shall be stated to the nearest whole percent. The percentage of dockage when equal to one-half percent or more shall be stated in terms of half percent, whole percent, or whole and half percent, as the case may be, with other fractions disregarded as shown in the following examples: Dockage ranging from 0.5 to 0.9 percent shall be expressed as 0.5 percent, from 1.0 to 1.4 percent as 1.0 percent, from 1.5 percent to 1.9 percent as 1.5 percent, etc. The percentage of ergot shall be stated to the nearest hundredth percent.



## **Grades, Grade Requirements, and Grade Designations**

### **§ 26.306 Grades and grade requirements.**

#### *Wheat*

(a) Grades and grade requirements for all classes of wheat, except Mixed wheat. (See also sec. 26.308.)

(b) **Grades and grade requirements for Mixed Wheat.** (See also § 26.308.) Mixed Wheat shall be graded according to the U.S. numerical and U.S. Sample grade requirements of the class of wheat which predominates in the mixture, except that the factor "wheat of other classes" shall be disregarded.

### **§ 26.307 Grade designation.**

(a) **Grade designations for wheat.** (see also § 26.308.)

The grade designations for wheat shall include in the following order: (1) The letters "U.S."; (2) the number of the grade or the words "Sample grade"; (3) the subclass, or in the case of Hard Red Winter Wheat, Mixed Wheat, Soft Red Winter Wheat, and Unclassed Wheat, the class; (4) Each applicable special grade (see also § 26.309); and (5) When applicable, the word "dockage" together with the percentage thereof. In the case of Western White Wheat, there shall be included under "Remarks" on the inspection certificate, the name and percentage of white club wheat and other white wheat in the mixture. In the case of Unclassed Wheat, there shall be included under "Remarks" on the inspection certificate the color or other characteristics which describe the wheat, together with the percentage thereof. In the case of Mixed Wheat, there shall be included under "Remarks" on the inspection certificate the name and percentage of the classes that comprise the mixture.

(b) **Optional grade designations.** Wheat may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as U.S. No. 2 or better Wheat," "U.S. No. 3 or better Wheat," etc. The optional grade designations for wheat shall include the name of the applicable class or subclass immediately preceding the word "wheat" in the grade designation. The special grade designations and dockage, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual. GR Instruction 918-6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.



Minimum test weight per bushel (pounds)		Percent maximum limits of—					
Grade	Hard Red Spring wheat or White Club wheat	All other classes and sub- classes	Heat damaged kernels	Damaged kernels (total) <sup>1</sup>	Foreign material Shrunken and broken kernels	Wheat of other classes <sup>3</sup>	
						Defects (total) <sup>2</sup>	Con- strasting classes of other classes (total) <sup>4</sup>
U.S. No. 1 ..	58.0	60.0	0.2	2.0	3.0	3.0	3.0
U.S. No. 2 ..	57.0	58.0	0.2	4.0	5.0	5.0	5.0
U.S. No. 3 ..	55.0	56.0	0.5	7.0	8.0	8.0	10.0
U.S. No. 4 ..	53.0	54.0	1.0	10.0	12.0	12.0	10.0
U.S. No. 5 ..	50.0	51.0	3.0	15.0	20.0	20.0	10.0
U.S. Sample grade . . . . .	U.S. sample grade shall be wheat which:						
(1) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4, or 5; or							
(2) Contains a quantity of smut so great that 1 or more of the grade requirements cannot be determined accurately; or							
(3) Contains 8 or more stones, 2 or more pieces of glass, 3 or more crotalaria seeds ( <i>Crotalaria spp.</i> ), 3 or more castor beans ( <i>Ricinus communis</i> ), 4 or more particles of an unknown foreign substance(s) or a commonly recognized harmful or toxic substance(s), or 2 or more rodent pellets, bird droppings, or an equivalent quantity of other animal filth per 1,000 g of wheat; or							
(4) Has a musty, sour, or commercially objectionable foreign odor (except smut or garlic odor); or							
(5) Is heating or otherwise of distinctly low quality.							

<sup>1</sup>Includes heat-damaged kernels.

<sup>2</sup>Defects (total) include damaged kernels (total), foreign material, and shrunken and broken kernels. The sum of these 3 factors may not exceed the limit for defects.

<sup>3</sup>Unclassed wheat of any grade may contain not more than 10 percent of wheat of other classes.

<sup>4</sup>Includes contrasting classes.



**Special Grades, Special Grade Requirements,  
and Special Grade Designations****§ 26.308 Special grades and special grade requirements.**

A special grade, when applicable, is supplemental to the grade assigned under § 26.306. Such special grades are established and determined as follows:

(a) **Ergoty wheat.** Wheat which contains more than 0.30 percent of ergot.

(b) **Light garlicky wheat.** Wheat which contains in a 1,000-gram portion two or more, but not more than six, green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets.

(c) **Garlicky wheat.** Wheat which contains in a 1,000-gram portion more than six green garlic bulblets or an equivalent quantity of dry or partly dry bulblets.

(d) **Light smutty wheat.** Wheat which has an unmistakable odor of smut, or which contains in a 250-gram portion smut balls, portions of smut balls, or spores of smut in excess of a quantity equal to 14 smut balls, but not in excess of a quantity equal to 30 smut balls of average size.

(e) **Smutty wheat.** Wheat which contains in a 250-gram portion smut balls, portions of smut balls, or spores of smut in excess of a quantity equal to 30 smut balls of average size.

(f) **Weevily wheat.** Wheat which is infested with live weevils or other insects injurious to stored grain. As applied to wheat, the meaning of the term "infested" is set forth in the Grain Inspection Manual.<sup>2</sup>

(g) **Treated wheat.** Wheat which has been scoured, limed, washed, sulfured, or treated in such a manner that the true quality is not reflected by either the U.S. numerical grade of the U.S. Sample grade designation alone.

**§ 26.309 Special grade designations.**

Special grade designations shall be made in addition to all other information prescribed in § 26.307.

(a) The grade designation for ergoty, light garlicky, garlicky, light smutty, smutty, and weevily wheat shall include in the order listed, following the applicable class or subclass, the words(s) "Ergoty," "Light garlicky," "Garlicky," "Light smutty," "Smutty," and "Weevily," as warranted, and all other information prescribed in § 26.307.

(b) The grade designation for treated wheat shall include, following the applicable class or subclass and any of the above applicable special grade designations, the word "Treated," followed by a statement indicating the kind of treatment (e.g., scoured, limed, washed, sulfured, etc.).

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See footnote 2 on p. 1.3.



## UNITED STATES STANDARDS FOR CORN

### § 26.351 Terms defined

For the purposes of the United States Standards for Corn (Maize):

(a) **Corn.** Corn shall be any grain which consists of 50 percent or more of whole kernels of shelled dent corn and/or shelled flint corn (*Zea mays*) and may contain not more than 10.0 percent of other grains for which standards have been established under the United States Grain Standards Act.

(b) **Classes.** Corn shall be divided into the following three classes: Yellow Corn, White Corn, and Mixed Corn.

(c) **Yellow Corn.** The class Yellow Corn shall be yellow-kerneled corn and may contain not more than 5.0 percent of corn of other colors. Yellow kernels of corn with a slight tinge of red shall be considered as yellow corn.

(d) **White Corn.** The class White Corn shall be white-kerneled corn and may contain not more than 2.0 percent of corn of other colors. White kernels of corn with a slight tinge of light straw or pink color shall be considered as white corn.

(e) **Mixed Corn.** The class Mixed Corn shall be corn which does not meet the color requirements for either of the classes Yellow Corn or White Corn and shall include white-capped yellow corn.

(f) **Grades.** Grades shall be the U.S. numerical grades, U.S. Sample grade, and special grades provided for in § 26.353.

(g) **Broken corn and foreign material.** Broken corn and foreign material shall be kernels and pieces of kernels of corn and all matter other than corn which will pass readily through a 12/64 sieve, and all matter other than corn which remains in the sieved sample.

(h) **Damaged kernels.** Damaged kernels shall be kernels and pieces of kernels of corn which are heat damaged, sprouted, frosted, badly ground damaged, badly weather damaged, moldy, diseased, or otherwise materially damaged.

(i) **Heat-damaged kernels.** Heat-damaged kernels shall be kernels and pieces of kernels of corn which have been materially discolored and damaged by heat.

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<sup>1</sup>The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act.



(j) **12/64 sieve.** A 12/64 sieve shall be an aluminum sieve 0.0319 inch thick perforated with round holes 0.1875 (12/64) inch in diameter which are  $\frac{1}{4}$  inch from center to center. The perforations of each row shall be staggered in relation to the adjacent row.

(k) **Stones.** Stones shall be concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

### **§ 26.352 Principles governing the application of the standards**

The following principles shall apply in the determination of the classes and grades of corn:

(a) **Basis of determination.** Each determination of the class, damaged kernels, heat-damaged kernels, flint corn, and flint and dent corn shall be upon the basis of the grain after the removal of the broken corn and foreign material. All other determinations shall be upon the basis of the grain as a whole.

(b) **Percentages.** All percentages shall be determined upon the basis of weight.

(c) **Moisture.** Moisture shall be ascertained by the air-oven method for corn prescribed by the United States Department of Agriculture as described in Service and Regulatory Announcements No. 147 (1959 Revision) of the Agricultural Marketing Service, or ascertained by any method which gives equivalent results.

(d) **Test weight per bushel.** Test weight per bushel shall be the weight per Winchester bushel as determined by the method prescribed by the United States Department of Agriculture as described in Circular No. 921, issued June 1953, or as determined by any method which gives equivalent results.

### **§ 26.353 Grades, grade requirements, and grade designations**

The following grades, grade requirements, and grade designations are applicable under these standards:



Corn

(a) **Grades and grade requirements for Corn.** (See also paragraph (d) of this section.)

Grade	Maximum limits of—				
	Minimum test weight per bushel	Mositure	Broken corn and foreign material	Damaged kernels	
				Total	Heat- damaged kernels
	<i>Pounds</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
U.S. No. 1 . . . . .	56.0	14.0	2.0	3.0	0.1
U.S. No. 2 . . . . .	54.0	15.5	3.0	5.0	.2
U.S. No. 3 . . . . .	52.0	17.5	4.0	7.0	.5
U.S. No. 4 . . . . .	49.0	20.0	5.0	10.0	1.0
U.S. No. 5 . . . . .	46.0	23.0	7.0	15.0	3.0
U.S. Sample grade . . . . .	U.S. Sample grade shall be corn which does not meet the requirements for any of the grades from U.S. No. 1 to U.S. No. 5, inclusive; or which contains stones; or which is musty, or sour, or heating; or which has any commercially objectionable foreign odor; or which is otherwise of distinctly low quality.				

Grade designations

(b) **Grade designations for corn.** The grade designations for corn shall include, in the order named, the letters “U.S.”; the number of the grade or the words “Sample grade,” as the case may be; the name of the applicable class; and the name of each applicable special grade.

(c) **Optional grade designations.** Corn may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as “U.S. No. 2 or better Corn,” “U.S. No. 3 or better Corn,” etc. The optional grade designations for corn shall include the name of the applicable class immediately preceding the word “corn” in the grade designation. The special grade designations, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.



### Special grades for corn

**(d) Special grades, special grade requirements, and special grade designations for corn.**

**(1) Flint Corn—(i) Requirements.** Flint corn shall be corn of any class which consists of 95 percent or more of flint corn.

**(ii) Grade designation.** Flint corn shall be graded and designated according to the grade requirements of the standards applicable to such corn if it were not flint, and there shall be added to and made a part of the grade designation, immediately following the class name, the word “Flint.”

**(2) Flint and dent corn—(i) Requirements.** Flint and dent corn shall be corn of any class which consists of a mixture of flint and dent corn containing more than 5.0 percent but less than 95 percent of flint corn.

**(ii) Grade designation.** Flint and dent corn shall be graded and designated according to the grade requirements of the standards applicable to such corn if it were not flint and dent, and there shall be added to and made a part of the grade designation immediately following the class name, the words, “Flint and Dent” and the approximate percentage of flint corn.

**(3) Weevily corn—(i) Requirements.** Weevily corn shall be corn which is infested with live weevils or other insects injurious to stored grain.

**(ii) Grade designation.** Weevily corn shall be graded and designated according to the grade requirements of the standards applicable to such corn if it were not weevily, and there shall be added to and made a part of the grade designation the word “Weevily.”

**(4) Waxy corn—(i) Requirement.** Waxy corn shall be corn of any class which consists of 95 percent or more waxy corn, as determined by a test approved by the Administrator.

**(ii) Grade designations.** Waxy corn shall be graded and designated according to the grade requirements of the standards applicable to such corn if it were not waxy, and there shall be added to and made a part of the grade designation immediately following the word “corn,” the word “waxy”.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual. GR Instruction 912-6 copies may be obtained from the Inspection Division Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.



**Interpretations [Added]**

**§ 26.901 Interpretation with respect to the term  
“distinctly low quality”**

The term “distinctly low quality,” when used in the United States Standards for Grain shall be construed to include grain which contains more than two crotalaria seeds (*Crotalaria* spp.) in 1,000 grams of grain.

**§ 26.904 Interpretation with respect to the term  
“yellow kernels of corn with a slight tinge of red.”**

The term “yellow kernels of corn with a slight tinge of red,” when used in the United States Standards for Corn (see § 26.351 (c)) shall be construed to include kernels which are yellow and/or light red in color, and kernels which are yellow and dark red in color provided the dark red color covers less than 50 percent of the kernel. Yellow and dark red kernels in which the dark red color covers 50 percent or more of the kernel shall be considered as “corn of other colors.”

**§ 26.905 Interpretation with respect to the term  
“white kernels of corn with a slight tinge of  
light straw or pink color.”**

(a) The term “white kernels of corn with a slight tinge of light straw or pink color,” when used in the United States Standards for Corn (see § 26.351 (d)) shall be construed to include kernels which are white and/or light straw or light pink in color, and kernels which are white and pink in color provided the pink color covers less than 50 percent of the kernel. White and pink kernels in which the pink color covers 50 percent or more of the kernel shall be considered as “corn of other colors.”

(b) For the special grade “waxy,” the requirement of white kernels of corn with a slight tinge of light straw shall not be applicable; however, kernels which are “slightly yellow” shall be considered as “corn of other colors.” All other color requirements contained in the above paragraph remain in effect for all classes of waxy corn.





## UNITED STATES STANDARDS FOR BARLEY<sup>1</sup>

### Terms Defined

#### § 26.201 Definition of barley.

Grain which, before the removal of dockage, consists of 50 percent or more of whole kernels of cultivated barley (*Hordeum vulgare* L. and *H. distichum* L.) and not more than 25 percent of other grains for which standards have been established under the United States Grain Standards Act. The term "barley" as used in these standards shall not include hull-less barley.

#### § 26.202 Definition of other terms.

For the purposes of these standards the following terms shall have the meanings stated below:

(a) **Black barley.** Barley with black hulls.

(b) **Broken kernels.** Barley with more than  $\frac{1}{4}$  of the kernel removed.

(c) **Classes.** Barley shall be divided into the following three classes: Six-rowed Barley, Two-rowed Barley, and Barley.

(1) **Six-rowed Barley.** Barley of the six-rowed type with white hulls which contains not more than 10.0 percent of two-rowed barley or black barley, either singly or combined. This class shall be divided into the following three subclasses:

(i) **Six-rowed Malting Barley.** Six-rowed barley of a suitable malting type which has 90.0 percent or more of kernels with white aleurone layers; which is not semisteely in mass; which is not badly stained or materially weathered, bleached, blighted, ergoty, garlicky, smutty, or weevily, and which otherwise meets the requirements of the grades for the subclass Six-rowed Malting Barley (see § 26.206).

(ii) **Six-rowed Blue Malting Barley.** Six-rowed barley of a suitable malting type which has 90.0 percent or more of kernels with blue aleurone layers; which is not semisteely in mass; which

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<sup>1</sup>Compliance with the provisions of these standards does not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or other Federal laws.



is not badly stained or materially weathered, bleached, blighted, ergoty, garlicky, smutty, or weevily; and which otherwise meets the requirements of the subclass Six-rowed Malting Barley (see § 26.206).

(iii) **Six-rowed Barley.** Any barley or the class Six-rowed Barley which does not meet the requirements of the subclass Six-rowed Malting Barley or Six-rowed Blue Malting Barley.

(2) **Two-rowed Barley.** Barley of the two-rowed type with white hulls which contain not more than 10.0 percent of six-rowed barley or black barley, either singly or combined. This class shall be divided into the following two subclasses:

(i) **Two-rowed Malting Barley.** Two-rowed barley of a suitable malting type, which is not semisteely in mass; which is not badly stained or materially weathered, bleached blighted, ergoty, garlicky, smutty, or weevily, and which otherwise meets the requirements of the grades for the subclass Two-rowed Malting Barley (see § 26.207).

(ii) **Two-rowed Barley.** Two-rowed barley which does not meet the requirements of the subclass Two-rowed Malting Barley.

(3) **Barley.** Barley which does not meet the requirements for any of the classes Six-rowed Barley, Two-rowed Barley, or which contains more than 10 percent of black barley.

(d) **Damaged kernels.** Kernels and pieces of kernels of barley, other grains, and wild oats, which are: Blight-damaged, mold-damaged (major and minor), heat-damaged (major and minor), sprout-damaged or malted, frost-damaged (major and minor), germ-damaged, badly ground-damaged, badly weather-damaged, insect-bored, or otherwise materially damaged.

(e) **Distinctly low quality.** Barley which is obviously of inferior quality because it contains foreign substances or because it is in an unusual state or condition, and which cannot be properly graded by use of the other grading factors provided in the standards.

(f) **Dockage.** Weed seeds, weed stems, chaff, straw, grain other than barley, sand, dirt, and any material other than barley which can be removed readily from a test portion of the original sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual.<sup>1</sup> Dockage shall

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<sup>1</sup>Grain Inspection Manual, GR Instruction 918-6, U.S. Department of Agriculture, Agricultural Marketing Service. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Ave. S.W., Washington, D.C. 20250.

include undveloped, shriveled, and small pieces of barley kernels, removed in properly separating the material other than barley and which cannot be recovered by properly rescreening or recleaning. For the purpose of this paragraph "approved device" shall include the Carter Dockage Tester and any other equipment that is approved by the Administrator as giving equivalent results.<sup>2</sup>

**(g) Foreign material.** All matter other than barley, other grains, and wild oats, which is not separated from the barley in the determination of dockage.

**(h) Frost-damaged kernels (major).** Kernels and pieces of kernels of barley which are badly shrunken and distinctly discolored black or brown by frost.

**(i) Frost-damaged kernels (minor).** Kernels and pieces of kernels of barley which are distinctly indented, immature or shrunken in appearance; or which are light green in color as a result of frost before maturity.

**(j) Germ-damaged kernels.** Kernels and pieces of kernels of barley that have dead germs or discolored germ ends indicative of dead germs.

**(k) Heat-damaged kernels (major).** Kernels and pieces of kernels of barley, other grains and wild oats, which are materially discolored and damaged by heat.

**(l) Heat-damaged kernels (minor).** Kernels and pieces of kernels of barley which are slightly discolored as a result of heating.

**(m) Mold-damaged kernels (major).** Kernels and pieces of kernels of barley which are weathered and contain considerable evidence of mold.

**(n) Mold-damaged kernels (minor).** Kernels and pieces of kernels of barley containing slight evidence of mold.

**(o) Moisture.** Water content in barley as determined by an approved device in accordance with procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph "approved device" shall include the Motomco moisture meter and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

**(p) Other grains.** Corn, cultivated buckwheat, einkorn, emmer, flaxseed, sorghum, guar, hull-less barley, nongrain sorghum, oats, Polish wheat, popcorn, pollard wheat, rice, rye, soybeans, spelt, sweet corn, sunflower, triticale, and wheat.

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<sup>2</sup>Requests for information concerning approved devices and procedures, criteria for approved device, and request for approval of devices should be directed to the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Ave. S.W., Washington, D.C. 20250.



(q) **Plump barley.** Barley that remains on top of a  $6/64 \times 3/4$  slotted-hole sieve after sieving in accordance with procedures prescribed in the Grain Inspection Manual.

(r) **Sieves, (1)  $5/64 \times 3/4$  slotted-hole sieve.** A metal sieve 0.032 inch thick with slotted perforations  $0.0781 (5/64)$  inch by  $0.750 (3/4)$  inch.

(2)  **$5 \frac{1}{2}/64 \times 3/4$  slotted-hole sieve.** A metal sieve 0.032 inch thick with slotted perforations  $0.0859 (5 \frac{1}{2}/64)$  inch by  $0.750 (3/4)$  inch.

(3)  **$6/64 \times 3/4$  slotted-hole sieve.** A metal sieve 0.032 inch thick with slotted perforations  $0.0937 (6/64)$  inch by  $0.750 (3/4)$  inch.

(s) **Skinned and broken kernels.** Barley kernels from which one-third or more of the hull has been removed, or in which the hull is loose or missing over the germ, or broken kernels, or whole kernels in which part of all of the germ is missing.

(t) **Sound barley.** Kernels and pieces of kernels, of barley, except for frost-damaged kernels (minor) and mold-damaged kernels (minor), which are not damaged as defined under paragraph (d) of this section.

(u) **Stones.** Concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

(v) **Suitable malting type.** Varieties of malting barley which have been approved as being suitable for malting purposes. The approved varieties are listed in the Grain Inspection Manual, GR Instruction 918-6, which is available upon request from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture.

(w) **Test weight per bushel.** (1) Test weight per bushel shall be the weight per Winchester bushel (2.150.42 cubic inch capacity) as determined on a test portion of the original sample by an approved device in accordance with instructions in the Grain Inspection Manual. For the purpose of this paragraph "approved device" shall include the Fairbanks-Morse or Ohaus Test Weight Per Bushel apparatus and any other equipment that is approved by the Administrator as giving equivalent results.

(2) Test weight per bushel shall be stated in terms of whole and half pounds; a fraction of a pound when equal to or greater than one-half shall be stated as one-half and when less than one-half shall be disregarded; e.g., 51.1 through 51.4 shall be 51.0 and 51.5 through 51.9 shall be 51.5.

(x) **Thin barley.** Barley and other matter which may be removed from a test portion of the original sample by an approved device in accordance with procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph "approved device" shall be the  $5 \frac{1}{2}/64 \times 3/4$  slotted-hole sieve

for the class Two-rowed Barley and the 5/64 x 3/4 slotted-hole sieve for the class Six-rowed Barley.

(y) **Wild Brome grasses.** Seeds of brome grasses such as *Bromus rigidus* which have harsh awns and which are injurious when fed to livestock.

(z) **Wild oats.** Seeds of *Avena fatua* and *A. sterilis*.

(aa) **Whole kernels.** Barley with 1/4 or less of the kernel removed.

## **Principles Governing The Application Of The Standards**

### **§ 26.203 Basis of determination.**

Each determination of dockage, moisture, temperature, odor, garlic, live weevils or other insects injurious to stored grain, crotalaria seeds, large stones, castor beans, broken glass, animal filth, an unknown foreign substance, a commonly recognized harmful or toxic substance, and otherwise distinctly low quality shall be upon the basis of the grain as a whole. Each determination of heat-damaged kernels, white aleurone layers in Six-rowed Malting Barley; and blue aleurone layers in Six-rowed Blue Malting Barley shall be determined on a test portion of pearled, dockage-free barley. All other determinations shall be on a test portion of barley when free from dockage.

### **§26.204 Temporary modification in equipment and procedures.**

The equipment and procedures referred to in the barley standards are applicable to barley produced and harvested under normal environmental conditions. Abnormal environmental conditions during the production and harvesting of barley may require minor temporary modifications in the equipment or procedures to obtain results expected under normal conditions. When these adjustments are necessary. Grain Division Field Offices, official inspection agencies, and interested parties in the grain trade will be notified promptly in writing of the modification. These modifications shall not include changes in interpretations of identity, class, quality, or condition.

### **§ 26.205 Percentages.**

(a) Percentages shall be determined on the basis of weight and shall be rounded off as follows:

(1) When the figure to be rounded is followed by a figure greater than 5, round to the next highest figure; e.g., 0.46, report as 0.5.



(2) When the figure to be rounded is followed by a figure less than 5, round to the next lowest figure; e.g., 0.54, report as 0.5.

(3) When the figure to be rounded is even and it is followed by the figure 5, retain the even figure. When the figure to be rounded is odd and it is followed by 5, round the figure to the next higher number; e.g., 0.45, report as 0.4; 0.55, report as 0.6.

(b) Percentages shall be stated in whole and tenth percent to the nearest tenth of a percent, except for dockage, the identity of barley, classes, ergot and for plump barley. The percentage of dockage, when equal to one percent or more, shall be stated as a whole percent; a fraction of a percent shall be disregarded. The percentage, when determining the identity of barley and the classes in the class "Barley," shall be stated to the nearest whole percent. The percent of ergot shall be stated to the nearest hundredth percent. The percentage of plump barley shall be determined to the nearest whole percent and expressed in terms of the range in which it falls. Ranges shall be: Below 50 percent, 50 percent to 55 percent, 56 percent to 60 percent; 61 percent to 65 percent, 66 percent to 70 percent, 71 percent to 75 percent, 76 percent to 80 percent, 81 percent to 85 percent, 86 percent to 90 percent, 91 percent to 95 percent, and 96 percent to and including 100 percent.

§ 26.206 Grades and grade requirements for the subclasses Six-rowed Malting Barley and Six-rowed Blue Malting Barley. (See also § 26.202(c) (1) (i) and (ii); § 26.210(a) through (h); and § 26.211.)

Grade <sup>1</sup>	Minimum limits of—				Maximum limits of—					
	Test weight per bushel	Suitable malting type	Sound barley	Damaged kernels <sup>2</sup>	Foreign material	Other grains	Skinned and broken kernels	Thin barley	Black barley	
	Pounds	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
U.S. No. 1 .....	47.0	95.0	97.0	2.0	1.0	2.0	4.0	7.0	0.5	
U.S. No. 2 .....	45.0	95.0	94.0	3.0	2.0	3.0	6.0	10.0	1.0	
U.S. No. 3 .....	43.0	95.0	90.0	4.0	3.0	5.0	8.0	15.0	2.0	

<sup>1</sup>Six-rowed Malting Barley and Six-rowed Blue Malting Barley may contain a maximum of 1.9 percent of frost damaged kernels of which not more than 0.4 percent may be frost-damaged (major), may contain a maximum of 0.2 percent of head-damaged kernels of which not more than 0.1 percent may be heat-damaged kernels (major), and may contain unlimited amounts of mold-damaged kernels (minor); however, mold-damaged kernels (major) shall function as 'damaged kernels' and against "sound barley."

<sup>2</sup>Frost-damaged kernels (minor) and mold-damaged kernels (minor) shall not be damaged kernels or scored against sound barley.

NOTE: Six-rowed barley that meets the requirements of U.S. No. 1 to U.S. No. 3, inclusive, for the subclasses Six-rowed Malting Barley and Six-rowed Blue Malting shall be classified and graded according to the requirements in this section. Otherwise, it shall be graded according to the requirements in § 26.208.



§ 26.207 Grades and grade requirements for the subclass Two-rowed Malting Barley. See also § 26.202(c) (2) (i); §26.210 (a) through (h); and § 26.211.)

Grade <sup>1</sup>	Minimum limits of—				Maximum limits of—			
	Test weight per bushel	Suit-able malting types	Sound barley <sup>2</sup>	Wild oats	Foreign material	Skinned and broken kernels	Thin barley	Black barley
	Pounds	Percent	Percent	Percent	Percent	Percent	Percent	Percent
U.S. No. 1 choice .....	50.0	97.0	98.0	1.0	0.5	5.0	5.0	0.5
U.S. No. 1 ....	48.0	97.0	98.0	1.0	0.5	7.0	7.0	0.5
U.S. No. 2 ....	48.0	95.0	96.0	2.0	1.0	10.0	10.0	1.0
U.S. No. 3 ....	48.0	95.0	93.0	3.0	2.0	10.0	10.0	2.0

<sup>1</sup>Two-rowed Malting Barley may contain a maximum of 1.9 percent of frost-damaged kernels of which not more than 0.4 percent may be frost-damaged kernels (major), may contain a maximum of 0.2 percent of heat-damaged kernels of which not more than 0.1 percent may be heat-damaged kernels (major), and may contain a maximum of 1.9 percent of mold-damaged kernels of which not more than 0.4 percent may be mold-damaged (major).

<sup>2</sup>Frost-damaged kernels (minor) and mold-damaged kernels (minor) shall not be scored against sound barley.  
NOTE: Two rowed barley that meets the requirements of U.S. No. 1 Choice to U.S. No. 3, inclusive, for the subclass Two-rowed Malting Barley shall be classified and graded according to the requirements in this section. Otherwise, it shall be graded according to the requirements in § 26.208.

§ 26.208 Grades and grade requirements for the subclasses Six-rowed Barley, Two-rowed Barley, and the class Barley. (See also § 26.202(c) (1) (iii), (2) (ii); § 26.210(a) through (h) and § 26.211.)

Minimum limits of—		Maximum limits of—						
Grade	Test weight per bushel	Sound barley	Damaged kernels <sup>1</sup>	Heat-damaged kernels (Major)	Foreign material	Broken kernels	Thin barley	Black barley <sup>2</sup>
	Pounds	Percent	Percent	Percent	Percent	Percent	Percent	Percent
U.S. No. 1	47.0	97.0	2.0	0.2	1.0	4.0	10.0	0.5
U.S. No. 2	45.0	94.0	4.0	0.3	2.0	8.0	15.0	1.0
U.S. No. 3	43.0	90.0	6.0	0.5	3.0	12.0	25.0	2.0
U.S. No. 4 <sup>3</sup>	40.0	85.0	8.0	1.0	4.0	18.0	35.0	5.0
U.S. No. 5	36.0	75.0	10.0	3.0	5.0	28.0	75.0	10.0
U.S. Sample grade	U.S. Sample grade shall be barley which—							
	(a) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4, or 5.							
	(b) Contains a quantity of smut so great that one or more of the grade requirements cannot be determined accurately.							
	(c) Contains more than 7 stones or more than 2 crotalaria seeds ( <i>Crotalaria</i> spp.) per 1,000 grams of barley							
	(d) Has a musty, sour, or commercially objectionable foreign odor (except smut or garlic odor, or							
	(e) Contains the seeds of wild brome grasses, or							
	(f) Is heating or otherwise of distinctly low quality.							

<sup>1</sup>Includes heat damaged kernels (major). Frost-damaged kernels (minor) and mold-damaged kernels (minor) shall not be considered as damaged kernels.

<sup>2</sup>These limits do not apply to the class Barley.

<sup>3</sup>Barley that is badly stained or materially weathered shall be graded not higher than U.S. No. 4.



**§ 26.209 Grade designations.**

(a) **Grade designations for barley.** The grade designation for barley shall include, in the following order: (1) The letters "U.S."; (2) The number of the grade of the words "Sample grade", (3) The special grade ("Bright," if applicable (see § 26.211); (4) The name of the applicable subclass or, in the case of the class barley, the name of the class; (5) The name of each applicable special grade (see § 26.211); (6) When applicable, the word "dockage" together with the percentage thereof; and (7) For malting barley, the words "Plump Barley" together with the applicable percentage range. If requested by the applicant, the grade designation for the class Barley shall include, following the word "Barley," the approximate percentage of each class and of black barley in the mixture in order of predominance.

(b) **Optional grade designations.** Barley may be certificated (under certain conditions,<sup>1</sup>) when supported by official analysis, as "U.S. No. 2 or better Barley," "U.S." No. 3 or better Barley," etc. The optional grade designation for barley shall include the name of the applicable class or subclass immediately preceding the word "barley" in the grade designation. The special grade designations and dockage, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

**Special Grades, Special Grade Requirements,  
and Special Grade Designations****§ 26.210 Special grades and special grade requirements.**

A special grade, when applicable, is supplemental to the grade assigned under § 26.206, § 26.207, or § 26.208. Such special grades are established and determined as follows:

(a) **Bleached barley.** Barley which, in whole or in part, has been treated with sulphurous acid or any other bleaching agent.

(b) **Blighted barley.** Barley which contains more than 4.0 percent of blight-damaged and/or mold-damaged kernels (major).

(c) **Bright barley.** Barley, except bleached barley, that is of exceptionally good natural color.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual. GR Instruction 918-6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

(d) **Ergoty barley.** Barley which contains ergot in excess of 0.10 percent.

(e) **Garlicky barley.** Barley which contains three or more green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets in 500 grams of barley.

(f) **Smutty barley.** Barley which has kernels covered with smut spores to give a smutty appearance in mass, or which contains 0.20 percent or more of smut masses.

(g) **Stained barley.** Barley, except bleached barley that is badly stained or weathered.

(h) **Tough barley.** Barley which contains more than 14.5 percent moisture.

(i) **Weevily barley.** Barley which is infested with live weevils or other insects injurious to stored grain. as applied to barley the meaning of the term "infested" is set forth in chapter V of the Grain Inspection Manual.<sup>2</sup>

### § 26.211 Special grade designations.

The grade designation for bright barley shall include, preceding the class or subclass, the word "Bright." The grade designation for bleached, blighted, ergoty, garlicky, smutty, tough, or weevily barley shall include, following the class or subclass, the word(s) "Bleached," "Blighted," "Ergoty," "Garlicky," "Smutty," "Stained," "Tough," or "Weevily," as warranted, and all other information prescribed in § 26.209.





# UNITED STATES STANDARDS FOR OATS

## Terms defined

### § 26.251 Definition of oats.

Grain which consists of 50 percent or more of oats (*Avena sativa* L. and *A. byzantina* C. Koch) and may contain, singly or in combination, not more than 25 percent of wild oats and other grains for which standards have been established under the United States Grain Standards Act.

### § 26.252 Definitions of other terms.

For the purposes of these standards the following terms shall have the meanings stated below:

(a) **Distinctly low quality.** Oats which are obviously of inferior quality because they contain foreign substances or because they are in an unusual state or condition, and which cannot be properly graded by use of the other grading factors provided in the standards.

(b) **Fine seeds.** All matter which may be removed from a test portion of the original sample by an approved device in accordance with procedures prescribed in the Grain Inspection Manual.<sup>2</sup> For the purpose of this paragraph, "approved device" shall be the 5/64 triangularhole sieve.<sup>3</sup>

(c) **Foreign material.** All matter other than oats, wild oats, and other grains (see paragraph (f) of this section).

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<sup>1</sup>Compliance with the provisions of these standards does not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or other Federal laws.

<sup>2</sup>Grain Inspection Manual, GR Instruction 918-6, effective August 28, 1972, as amended, U.S. Department of Agriculture, Agricultural Marketing Service. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, Washington, D.C. 20250.

<sup>3</sup>Requests for information concerning approved devices and procedures, criteria for approved devices, and request for approval of devices should be directed to the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, Washington, D.C. 20250.



(d) **Heat-damaged kernels.** Kernels and pieces of kernels of oats, other grains (see paragraph (f) of this section), and wild oats which are materially discolored and damaged as a result of heating.

(e) **Moisture.** Water content in oats as determined by an approved device in accordance with procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph "approved device" shall include the Motomco Moisture Meter and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(f) **Other grains.** Barley, corn, cultivated buckwheat, einkorn, emmer, flaxseed, guar, hull-less barley, nongrain sorghum, Polish wheat, popcorn, poulard wheat, rice, rye, sorghum, soybeans, spelt, sunflower, sweet corn, triticale, and wheat.

(g) **Sieves.** (1) **5/64 triangular-hole sieve.** A metal sieve 0.032 inch thick with equilateral triangular perforations the inscribed circles of which are 0.0781 (5/64) inch in diameter.

(2) **0.064 x 3/8 oblong-hole sieve.** A metal sieve 0.032 inch thick with oblong perforations 0.064 inch by 0.375 (3/8) inch.

(h) **Sound oats.** Kernels and pieces of kernels of oats (except wild oats) which are not badly ground-damaged, badly weather-damaged, diseased, frost-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged, or otherwise materially damaged.

(i) **Stones.** Concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

(j) **Test weight per bushel.** Test weight per bushel shall be the weight per Winchester bushel (2,150.42 cubic inch capacity) as determined on a test portion of the original sample by an approved device in accordance with instructions in the Grain Inspection Manual. For the purpose of this paragraph "approved device" shall include the Fairbanks-Morse or Ohaus Test Weight Per Bushel Apparatus and any other equipment that is approved by the Administrator as giving equivalent results.

Test weight per bushel, for grade determination, shall be stated in terms of whole and half pounds; a fraction of a pound when equal to or greater than one-half shall be stated as one-half and when less than one-half shall be disregarded: e.g., 41.1 through 41.4 shall be 41.0 and 41.5 through 41.9 shall be 41.5.

(k) **Wild oats.** Seeds of *Avena fatua* and *A. Sterilis*.

## **Principles Governing Application of Standards**

### **§ 26.253 Basis of determination.**

All determinations shall be on a test portion of the original sample.

### **§ 26.254 Temporary modifications in equipment and procedures.**

The equipment and procedures referred to in the oats standards are applicable to oats produced and harvested under normal environmental conditions. Abnormal environmental conditions during the production and harvesting of oats may require minor temporary modifications in the equipment or procedures to obtain results expected under normal conditions. When these adjustments are necessary; Inspection Division Field Offices, official inspection agencies, and interested parties in the grain industry will be notified promptly in writing of the modification. Changes in interpretations of identity, quality, and condition are excluded and shall not be made.

### **§ 26.255 Percentages.**

Percentages shall be determined on the basis of weight and shall be rounded off as follows:

(a) When the figure to be rounded is followed by a figure greater than 5, round to the next higher figure; e.g., 0.46, report as 0.5.

(b) When the figure to be rounded is followed by a figure less than 5, round to the next lowest figure; e.g., 0.54, report as 0.5.

(c) When the figure to be rounded is even and it is followed by the figure 5, retain the even figure. When the figure to be rounded is odd and it is followed by 5, round the figure to next highest number; e.g., 0.45, report as 0.4; 0.55, report as 0.6.

Percentages, except when determining the quantity of ergot and the identity of oats, shall be stated in whole and tenth percent to the nearest tenth percent, unless otherwise prescribed in the Grain Inspection Manual. The percentage of ergot shall be stated to the nearest hundredth percent. The percentage of oats, wild oats, and other grains in determining the identity of oats shall be stated to the nearest whole percent.



## Grades, Grade Requirements, and Grade Designations

### § 26.256 Grades and grade requirements for oats. (See also § 26.258.)

Grade	Minimum limits		Maximum limits		
	Test weight per bushel	Sound oats	Heat-damaged kernels	Foreign material	Wild oats
	<i>Pounds</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
U.S. No. 1 .....	36.0	97.0	0.1	2.0	2.0
U.S. No. 2 .....	33.0	94.0	.3	3.0	3.0
U.S. No. 3 <sup>1</sup> .....	30.0	90.0	1.0	4.0	5.0
U.S. No. 4 <sup>2</sup> .....	27.0	80.0	3.0	5.0	10.0
U.S. Sample grade .....	U.S. Sample grade shall be oats which—				
	(a) Do not meet the requirements for the grades U.S. No. 1, 2, 3, or 4.				
	(b) Contain more than 7 stones which have an aggregate weight in excess of 0.2 percent of the sample weight or more than 2 crotalaria seeds ( <i>Crotalaria</i> spp.) per 1,000 grams of oats or more than 16 percent of moisture.				
	(c) Have a musty, sour, or commercially objectionable foreign odor (except smut or garlic odor), or				
	(d) Are heating or otherwise of distinctly low quality.				

<sup>1</sup>Oats that are slightly weathered shall be graded not higher than U.S. No. 3.

<sup>2</sup>Oats that are badly stained or materially weathered shall be graded not higher than U.S. No. 4.

### § 26.257 Grade designations.

(a) **Grade designations for oats.** The grade designations for oats shall include in the following order: (1) The letters "U.S."; (2) The number of the grade or the words "Sample grade"; (3) Certain special grade designations, if applicable (see § 26.259); (4) The word "oats"; and (5) Certain special grade designations, if applicable (see § 26.259).

(b) **Optional grade designations.** Oats may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as “U.S. No. 2 or better Oats,” “U.S. No. 3 or better Oats,” etc. The special grade designations, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

### **Special Grades, Special Grade Requirements, and Special Grade Designations**

#### **§ 26.258 Special grades and special grade requirements.**

A special grade, when applicable, is supplemental to the grade assigned under § 26.256. Such special grades are established and determined as follows:

(a) **Bleached oats.** Oats which in whole or in part, have been treated with sulphurous acid or any other bleaching agent.

(b) **Bright oats.** Oats, except Bleached oats, that are of good natural color.

(c) **Ergoty oats.** Oats which contain ergot in excess of 0.10 percent.

(d) **Extra-heavy oats.** Oats which have a test weight per bushel of 40 pounds or more.

(e) **Garlicky oats.** Oats which contain 4 or more green garlic bulblets or an equivalent quantity of dry or partly dry bulblets in 500 grams of oats.

(f) **Heavy oats.** Oats which have a test weight per bushel of 38 pounds or more but less than 40 pounds.

(g) **Smutty oats.** Oats which have kernels covered with smut spores or which contain smut masses and smut balls in excess of 0.2 percent.

(h) **Thin oats.** Oats which contain more than 20.0 percent of oats and other matter, except “fine seeds,” which may be removed from a test portion of the original sample by approved devices in accordance with the procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph “approved devices” shall be the 0.064 x 3/8 oblong-hole sieve and the 5/64 triangular-hole sieve.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual, GR Instruction 918-6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.



(i) **Tough oats.** Oats which contain more than 14.0 percent but not more than 16.0 percent of moisture.

(j) **Weevily oats.** Oats which are infested with live weevils or other insects injurious to stored grain. As applied to oats, the meaning of the term "infested" is set forth in chapter VI of the Grain Inspection Manual.

#### **§ 26.259 Special grade designations.**

(See also § 26.258.)

The grade designations for bright, extra-heavy, and heavy oats shall include, preceding the word "oats," the word(s) "Bright," "Extra-heavy," or "Heavy," as warranted, and all other information prescribed in § 26.257. The grade designation for bleached, ergoty, garlicky, smutty, thin, tough, and weevily oats shall include, following the word "oats," the word(s) "Bleached," "Ergoty," "Garlicky," "Smutty," "Thin," "Tough," or "Weevily," as warranted, and all other information prescribed in § 26.257.

## UNITED STATES STANDARDS FOR RYE<sup>1</sup>

### § 26.401 Terms defined

For the purposes of the United States Standards for Rye:

(a) **Rye.** Rye shall be any grain which, before the removal of dockage, consists of 50 percent or more of rye and not more than 10.0 percent of other grains for which standards have been established under the provisions of the United States Grain Standards Act.

(b) **Grades.** Rye shall be graded and designated according to the respective grade requirements of the U.S. numerical grades and U.S. Sample grade of these standards, and according to the special grades when applicable.

Note:—“§ 26.402—(Rye; grade requirements) on following page.”

### § 26.403 Dockage

Dockage includes weed seeds, weed stems, chaff, straw, grain other than rye, sand, dirt, and any other foreign material, which can be removed readily from the rye by the use of appropriate sieves and cleaning devices; also undeveloped, shriveled, and small pieces of rye kernels which are removed in properly separating the foreign material, and which cannot be recovered by properly rescreening or recleaning.

The quantity of dockage shall be calculated in terms of percentage based on the total weight of the grain including the dockage. The percentage of dockage so calculated, when equal to 1.0 percent or more, shall be stated in terms of whole percent, and when less than 1.0 percent shall not be stated. A fraction of a percent shall be disregarded. The word “Dockage”, together with the percentage thereof, shall be added to the grade designation.

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<sup>1</sup>The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act.



## § 26.402 Grades, grade requirements, and grade designations.

### Rye

(a) Grades and grade requirements for Rye. (See also §§ 26.403(a) through 26.408.)

Grade No.	Min- imum test weight per bushel	Maximum limits of—			
		Damaged kernels (rye and other grains)		Foreign material	
		Total	Heat- dam- aged	Total	Foreign matter other than wheat
	<i>Pounds</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
U.S. No. 1 <sup>1</sup> . . . . .	56.0	2.0	0.1	3.0	1.0
U.S. No. 2 <sup>1</sup> . . . . .	54.0	4.0	.2	6.0	2.0
U.S. No. 3 <sup>1</sup> . . . . .	52.0	7.0	.5	10.0	4.0
U.S. No. 4 . . . . .	49.0	15.0	3.0	10.0	6.0
U.S. Sample grade . . . . .	U.S. Sample grade include rye which does not come within the requirements of any of the grades from U.S. No. 1 to U.S. No. 4, inclusive; or which contains more than 16 percent of moisture; or which contains inseparable stones and/or cinders; or which is musty, or sour, or heating, or hot; or which has any commercially objectionable foreign odor except of smut or garlic; or which contains a quantity of smut so great that any one or more of the grade requirements cannot be applied accurately; or which is otherwise of distinctly low quality.				

<sup>1</sup>The rye in grade U.S. No. 1 may contain not more than 10.0 percent, in grade U.S. No. 2 not more than 15.0 percent, and in grade U.S. No. 3 not more than 25.0 percent of "thin" rye, which "thin" rye shall consist of rye and other matter that will pass readily through a sieve 0.032 inch thick with perforations 0.064 inch by 0.375 inch.

(b) **Grade designations for rye.** The grade designations for rye shall include the letters "U.S."; the number of the grade or the words "Sample grade," as the case may be; the word "Rye"; the name of each applicable special grade; and when applicable the word "dockage" together with the percentage thereof.

(c) **Optional grade designations.** Rye may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as "U.S. No. 2 or better Rye," "U.S. No. 3 or better Rye," etc. The special grade designation and dockage, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

### § 26.403a Special grade; Plump rye

(a) **Definition.** Plump rye shall be rye which does not contain more than 5.0 percent of rye and other matter that will pass through a 20-gage metal sieve with rectangular perforations 0.064 inch wide by 3/4 inch long.

(b) **Grades.** Plump rye shall be graded and designated according to the grade requirements of the standards applicable to such rye if it were not plump, and there shall be added to and made a part of the grade designation, immediately preceding the word rye, the word "Plump."

### § 26.404 Special grade; Tough rye

(a) **Definition.** Tough rye shall be rye which contains more than 14.0 percent but not more than 16.0 percent of moisture.

(b) **Grades.** Tough rye shall be graded and designated according to the grade requirements of the standards applicable to such rye if it were not tough, and there shall be added to and made a part of the grade designation, the word "Tough."

### § 26.405 Special grade; Smutty rye

(a) **Definition.** Smutty rye shall be rye which has an unmistakable odor of smut, or which contains balls, portions of balls, or spores, of smut, in excess of a quantity equal to 14 balls of average size in 250 grams of rye.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual, GR Instruction 918-6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.



(b) **Grades.** Smutty rye shall be graded and designated according to the grade requirements of the standards applicable to such rye if it were not smutty; and

(1) In the case of smutty rye which has an unmistakable odor of smut, or which contains balls, portions of balls, or spores, of smut, in excess of a quantity equal to 14 balls but not in excess of a quantity equal to 30 balls of average size in 250 grams of rye, there shall be added to, and made a part of, the grade designation, the words "Light Smutty"; and

(2) In the case of smutty rye which contains balls, portions of balls, or spores, of smut, in excess of a quantity equal to 30 balls of average size in 250 grams of rye, there shall be added to, and made a part of, the grade designation, the word "Smutty."

#### **§ 26.406 Special grade; Garlicky rye**

(a) **Definition.** Garlicky rye shall be rye which contains two or more green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets, in 1,000 grams of rye.

(b) **Grades.** Garlicky rye shall be graded and designated according to the grade requirements of the standards applicable to such rye if it were not garlicky; and

(1) In the case of garlicky rye which contains two or more but not more than six green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets, in 1,000 grams of rye, there shall be added to, and made a part of, the grade designation, the words "Light Garlicky"; and

(2) In the case of garlicky rye which contains more than six green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets, in 1,000 grams of rye, there shall be added to, and made a part of, the grade designation, the word "Garlicky."

#### **§ 26.407 Special grade; Weevily rye**

(a) **Definition.** Weevily rye shall be rye which is infested with live weevils or other insects injurious to stored grain.

(b) **Grades.** Weevily rye shall be graded and designated according to the grade requirements of the standards applicable to such rye if it were not weevily, and there shall be added to, and made a part of, the grade designation, the word "Weevily."

#### **§ 26.408 Special grade; Ergoty rye**

(a) **Definition.** Ergoty rye shall be rye which contains ergot in excess of 0.3 percent.

(b) **Grades.** Ergoty rye shall be graded and designated according to the grade requirements of the standards applicable

to such rye if it were not ergoty, and there shall be added to, and made a part of, the grade designation, the word "Ergoty."

## § 26.409 Grade factors; definitions

(a) **Basis of grade determinations.** Each determination of dockage, temperature, odor, garlic, and live weevils or other insects injurious to stored grain, shall be upon the basis of the grain as a whole. All other determinations shall be upon the basis of the grain when free from dockage.

(b) **Percentages.** Percentages, except in the case of moisture, shall be percentages ascertained by weight.

(c) **Percentage of moisture.** Percentage of moisture shall be that ascertained by the air oven and the method of use thereof described in Service and Regulatory Announcements No. 147 of the Agricultural Marketing Service of the United States Department of Agriculture, or ascertained by any device and method which give equivalent results in the determination of moisture.

(d) **Test weight per bushel.** Test weight per bushel shall be the weight per Winchester bushel as determined by the testing apparatus and the method of use thereof described in Bulletin No. 1065, dated May 18, 1922, issued by the United States Department of Agriculture, or as determined by any device and method which give equivalent results in the determination of test weight per bushel.

(e) **Foreign material.** Foreign material shall include all matter other than rye which is not separated from the rye in the proper determination of dockage, except that smut balls shall not be considered as foreign material.

(f) **Other grains.** Other grains shall include wheat oats, corn, grain sorghum, barley, hull-less barley, flaxseed, emmer, spelt, einkorn, Polish wheat, poulard wheat, cultivated buckwheat, and soybeans.

(g) **Damaged kernels.** Damaged kernels shall be kernels and pieces of kernels of rye and other grains which are heat damaged, sprouted, frosted, badly ground damaged, badly weather damaged, or otherwise materially damaged.

(h) **Heat-damaged kernels.** Heat-damaged kernels shall be kernels and pieces of kernels of rye and other grains which have been materially discolored and damaged by external heat or as a result of heating caused by fermentation.



**Interpretations [Added]****§ 26.901 Interpretation with respect to the term  
“distinctly low quality”**

The term “distinctly low quality,” when used in the United States Standards for Grain, shall be construed to include grain which contains more than two crotalaria seeds (*Crotalaria* spp.) in 1,000 grams of grain.

# UNITED STATES STANDARDS FOR SORGHUM<sup>1</sup>

## Terms Defined

### § 26.551 Definition of sorghum.

Grain which, before the removal of dockage, consists of 50 percent or more of whole kernels of sorghum (*Sorghum vulgare*) excluding nongrain sorghum and which contains not more than 10.0 percent of other grains for which standards have been established under the United States Grain Standards Act. Whole kernels, for purposes of this determination, shall be sorghum with 1/4 or less of the kernel removed.

### § 26.552 Definitions of other terms.

For the purposes of these standards the following terms shall have the meanings stated below:

(a) **Broken kernels, foreign material, and other grains.**—All material, including whole kernels of sorghum and pieces of kernels of sorghum (except dockage) which may be removed from a test portion of the original sample by use of an approved device, and by handpicking a portion of the sample, in accordance with procedures prescribed in the Grain Inspection Manual.<sup>2</sup> For the purpose of this paragraph “approved device” shall include the Carter Dockage Tester and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(b) **Classes.**—The following four classes:

(1) **Brown sorghum.**—Sorghum with brown pericarps or brown subcoats which contains not more than 10.0 percent of sorghum of other colors.

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<sup>1</sup>Compliance with the provisions of these standards does not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or other Federal laws.

<sup>2</sup>Grain Inspection Manual, GR Instruction 918-6, revised August 28, 1972. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, Washington, D.C. 20250.



(2) **White sorghum.**—Sorghum with white pericarps which contains not more than 2.0 percent of sorghum with pericarps or subcoats of other colors.

(3) **Yellow sorghum.**—Sorghum with yellow, salmon-pink, red, or white pericarps, or white but spotted pericarps, which contains not more than 10.0 percent of sorghum with brown pericarps or subcoats and which does not meet the requirements for the class White Sorghum.

(4) **Mixed sorghum.**—Sorghum which does not meet the requirements for any of the classes Brown Sorghum, Yellow Sorghum, or White Sorghum.

(c) **Damaged kernels (total).**—Kernels and pieces of kernels of sorghum and other grains which are heat-damaged, sprout-damaged, frost-damaged, badly ground-damaged, badly weather-damaged, mold-damaged, diseased, insect-bored, or otherwise materially damaged.

(d) **Distinctly low quality.**—Sorghum which is obviously of inferior quality because it contains foreign substances or because it is in an unusual state or condition, and which cannot be graded by use of the other grading factors provided in the standards.

(e) **Dockage.**—Material that will pass through a 2-1/2/64 inch round-hole sieve (see paragraph (k) of this section), including pieces of sorghum, which may be removed from a test portion of the original sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph “approved device” shall include the Carter Dockage Tester and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(f) **Heat-damaged kernels**—Kernels and pieces of kernels of sorghum and other grains which are materially discolored and damaged as a result of heating.

(g) **Moisture**—Water content in sorghum as determined by an approved device in accordance with procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph “approved device” shall include the Motomco Moisture Meter and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

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<sup>3</sup>Requests for information concerning approved devices and procedures, criteria for approved devices, and request for approval of devices should be directed to the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, Washington, D.C. 20250.

(h) **Nongrain sorghum.**—Seeds of broomcorn, johnson-grass, sorghum alnum, sorghum-sudangrass hybrids, sorgrass, sudangrass, and sweet sorghum (sorgo).

(i) **Other grains.**—Barley, corn, cultivated buckwheat, einkorn, emmer, flaxseed, hull-less barley, nongrain sorghum, oats, Polish wheat, popcorn, poulard wheat, rice, rye, soybeans, spelt, sunflower, sweet corn, triticale, wheat, and wild oats.

(j) **Pericarp.**—The pericarp is the outer layers of the sorghum grain and is fused to the seedcoat.

(k) **Sieves.**—(1) *5/64 triangular-hole sieve.* A metal sieve 0.032 inch thick with equilateral triangular perforations the inscribed circles of which are 0.0781 inch in diameter.<sup>3</sup>

(2) *2-1/2/64 round-hole sieve.* A metal sieve 0.032 inch thick with round holes 2-1/2/64 inch in diameter.<sup>3</sup>

(l) **Stones.**—Concreted earthly or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

(m) **Test weight per bushel.**—Test weight per bushel shall be the weight per Winchester bushel (2,150.42 cubic inch capacity) as determined on a test portion of the original sample by an approved device in accordance with instructions in the Grain Inspection Manual.<sup>2</sup> For the purpose of this paragraph, “approved device” shall include the Fairbanks-Morse or Ohaus Test Weight Per Bushel Apparatus and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup> Test weight per bushel shall be stated in terms of whole and half pounds; a fraction of a pound when equal to or greater than one-half shall be stated as one-half and when less than one-half shall be disregarded; e.g., 51.1 through 51.4 shall be 51.0, and 51.5 through 51.9 shall be 51.5.

## Principles Governing Application Of Standards

### § 26.553 Basis of determination.

Each determination of “broken kernels, foreign material, and other grains” shall be determined on a test portion of the grain sample when free from “dockage.” Each determination of “class,” “damaged kernels,” “heat-damaged kernels,” and “stones” shall determined on a test portion of the grain sample when free from “dockage,” and that part of the “broken kernels,



foreign material, and other grains” which will pass through a 5/64 inch triangular-hole sieve (see § 26.52(k)). All other determinations shall be on a test portion of the original sample.

#### **§ 26.554 Temporary adjustments in equipment and procedures.**

The equipment and procedures referred to in the sorghum standards are applicable to sorghum produced and harvested under normal environmental conditions. Abnormal environmental conditions during the production and harvest of sorghum may require temporary, nonsubstantive adjustments in the procedures or equipment to obtain results expected under normal conditions. Adjustments in interpretations (i.e., identity, class, quality, and condition) are excluded and shall not be made. When these adjustments are necessary, Grain Division Field Offices, Official Inspection Agencies and interested parties in the grain trade will be notified promptly in writing of the change.

#### **§ 26.555 Percentages.**

(a) Percentages shall be determined on the basis of weight and shall be rounded off as follows:

(1) When the figure to be rounded is followed by a figure greater than 5, round to the next higher figure, e.g., 0.46, report as 0.5.

(2) When the figure to be rounded is followed by a figure less than 5, round to the next lowest figure, e.g., 0.54, report as 0.5.

(3) When the figure to be rounded is even and it is followed by the figure 5, retain the even figure. When the figure to be rounded is odd and it is followed by 5, round the figure to the next highest number, e.g., 0.45, report as 0.4; 0.55, report as 0.6.

(b) Percentages, except for dockage shall be stated in whole and tenth percent to the nearest tenth percent. The percentage of dockage when equal to one percent or more shall be stated as a whole percent; a fraction of a percent shall be disregarded.

(c) The percentage of “broken kernels, foreign material, and other grains” shall be the sum of the percentage determined for the mechanically separated portion and the percentage determined for the handicapped portion in accordance with instructions in the Grain Inspection Manual.<sup>3</sup>

#### **§ 26.556 [Reserved]**

# Grades, Grade Requirements, And Grade Designations

## § 26.557 Grades and grade requirements for all classes of sorghum. (See also § 26.559.)

Grade	Maximum limits of—				
	Min- imum test weight per bushel	Mois- ture	Damaged kernels		Broken kernels, foreign material, & other grains
			Total	Heat- damaged kernels	
	<i>Pounds</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
U.S. No. 1 .....	57.0	13.0	2.0	0.2	4.0
U.S. No. 2 .....	55.0	14.0	5.0	0.5	8.0
U.S. No. 3 <sup>1</sup> .....	53.0	15.0	10.0	1.0	12.0
U.S. No. 4 .....	51.0	18.0	15.0	3.0	15.0
U.S. Sample grade .....	U.S. Sample grade shall be sorghum which—				
	(a) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, or 4.				
	(b) Contains more than 7 stones which have an aggre- gate weight in excess of 0.2 percent of the sample weight or more than 2 crotalaria seeds ( <i>Crota-</i> <i>laria</i> spp.) per 1,000 grams of sorghum.				
	(c) Has a musty, sour, or commercially objectionable foreign odor (except smut odor) or				
	(d) Is badly weathered, heating, or distinctly low qual- ity (see § 26.552(d) ).				

<sup>1</sup>Sorghum which is distinctly discolored shall not be graded higher than U.S. No. 3.



**§ 26.558 Grade designations.**

(a) **Grade designations for sorghum.** The grade designations for sorghum shall include in the following order: (1) The letters "U.S.," (2) The number of the grade or the words "Sample grade," (3) The class, (4) Each applicable special grade (see §26.560), and (5) When applicable, the words "dockage" together with the percentage thereof. The grade designation for the class "Mixed Sorghum" shall include, following the words "Mixed Sorghum," the approximate percentage of each class of sorghum in the mixture in the order of predominance.

(b) **Optional grade designations.** Sorghum may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as "U.S. No. 2 or better Sorghum," "U.S. No. 3 or better Sorghum," etc. The optional grade designation for sorghum shall include the name of the applicable class immediately preceding the word "sorghum" in the grade designation. The special grade designations and dockage, when applicable, also shall be included (under certain conditions<sup>2</sup>) in the certification.

**Special Grades, Special Grade Requirements,  
And Special Grade Designations****§ 26.559 Special grades and special grade requirements.**

A special grade, when applicable, is supplemental to the grade assigned under § 26.557. Such special grades are established and determined as follows:

(a) **Smutty sorghum.** Sorghum which is covered with smut spores or which contains 20 or more smut masses in 100 grams of sorghum.

(b) **Weevily sorghum.** Sorghum which is infested with live weevils or other live insects injurious to stored grain. As applied to sorghum the meaning of the term "infested" is set forth in chapter IX of the Grain Inspection Manual.<sup>2</sup>

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual, GR Instruction 918.6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

**§ 26.560 Special grade designation.**

The grade designation for smutty or weevily sorghum shall include, following the class, the word(s) "Smutty" or "Weevily," as warranted, and all other information prescribed in § 26.558.





## UNITED STATES STANDARDS FOR FLAXSEED<sup>1</sup>

### § 26.501 Terms defined

For the purposes of the United States Standards for Flaxseed (*Linum usitatissimum*), the terms specified in §§ 26.502 through 26.506 shall have the meanings stated in said sections, respectively.

### § 26.502 Flaxseed

Flaxseed shall be any grain which, before the removal of dockage, consists of 50 percent or more of flaxseed and not more than 20.0 percent of other grains for which standards have been established under the provisions of the United States Grain Standards Act.

### § 26.503 Dockage

Dockage shall be all matter other than flaxseed, also underdeveloped and shriveled flaxseed and small pieces of flaxseed removed in properly separating the material other than flaxseed and which cannot be recovered by properly rescreening or recleaning. (See also §§ 26.509 and 26.514.)

### § 26.504 Damaged flaxseed

Damaged flaxseed shall be flaxseed and pieces of flaxseed which are heat-damaged, sprouted, frosted, badly ground damaged, badly weather damaged, moldy, diseased, or otherwise materially damaged.

### § 26.505 Heat-damaged flaxseed

Heat-damaged flaxseed shall be flaxseed and pieces of flaxseed which are materially discolored and damaged by heat.

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<sup>1</sup>The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act.

**§ 26.506 Stones**

Stones shall be concreated earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

**§ 26.507 Principles governing application of standards**

The principles stated in § § 26.508 through 26.511 shall apply in the determination of the grades of flaxseed.

**§ 26.508 Basis of determinations**

Each determination of moisture, test weight per bushel, heat-damaged flaxseed, and damaged flaxseed, shall be upon the basis of the grain after the removal of that part of the dockage which can be removed readily by the use of appropriate sieves and cleaning devices. All other determinations shall be upon the basis of the grain as a whole.

**§ 26.509 Percentages**

All percentages shall be upon the basis of weight. Percentages except for dockage shall be expressed in while and tenth percent to the nearest tenth of a percent. The percentage of dockage when equal to 1.0 percent or more shall be stated in terms of whole percent and when less than 1.0 percent shall not be stated. A fraction of a percent of dockage shall be disregarded.

**§ 26.510 Moisture**

Moisture shall be ascertained by use of the equipment and procedure prescribed by the Agricultural Marketing Service, U.S. Department of Agriculture. (Information thereon may be obtained from said Service.)

**§ 26.511 Test weight per bushel**

Test weight per bushel shall be the weight per Winchester bushel as determined by the method prescribed by the U.S. Department of Agriculture as described in Circular No. 921, issued June 1953. Test weight per bushel shall be expressed in whole and half pounds. A fraction of a half pound shall be disregarded.

§ 26.512 Grades

Grades shall be the U.S. numerical grades and U.S. Sample grade provided for in § 26.513.

§ 26.513 Grades and grade requirements for Flaxseed.

Grade	Minimum test weight per bushel	Maximum limits of—	
		Heat- damaged flaxseed	Damaged flaxseed (total)
	<i>Pounds</i>	<i>Percent</i>	<i>Percent</i>
U.S. No. 1 .....	49.0	0.2	10.0
U.S. No. 2 .....	47.0	.5	15.0
U.S. Sample grade .....	U.S. Sample grade shall be flaxseed which does not meet the requirements for grade U.S. No. 1 or U.S. No. 2; or which contains more than 9.5 percent of moisture; or which contains castor beans ( <i>Ricinus communis</i> ), crotalaria seeds ( <i>Crotalaria spp.</i> ), stones, unknown foreign substances, or commonly recognized harmful or toxic substances; or which is musty, sour, or heating; or which has any commercially objectionable foreign odor; or which is otherwise of distinctly low quality.		

§ 26.514 Grade designations

(a) **Grades designations for flaxseed.** The grade designation for flaxseed shall include, in the following order: (1) The letters “U.S.”; (2) The number of the grade or the words “Sample grade”; (3) The word “flaxseed”; and (4) When applicable, the word “dockage” together with the percentage thereof.



(b) **Optional grade designations.** Flaxseed may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as “U.S. No. 2 or better Flaxseed” or “U.S. Sample grade or better Flaxseed.” Dockage, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

### Interpretations [Added]

#### § 26.901 Interpretation with respect to the term “distinctly low quality”

The term “distinctly low quality,” when used in the United States Standards for Grain, shall be construed to include grain which contains more than two crotalaria seeds (*Crotalaria* spp.) in 1,000 grams of grain.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual, GR Instruction 928-6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W. Washington, D.C. 20250.

## UNITED STATES STANDARDS FOR SOYBEANS<sup>1</sup>

### § 26.601 Terms defined

For the purposes of the United States Standards for Soybeans:

(a) **Soybeans.** Soybeans shall be any grain which consists of 50 percent or more of whole or broken soybeans which will not pass readily through an 8/64 sieve and not more than 10.0 percent of other grains for which standards have been established under the United States Grain Standards Act.

(b) **Classes.** Soybeans shall be divided into the following five classes: Yellow soybeans, green soybeans, brown soybeans, black soybeans, and mixed soybeans.

(c) **Yellow soybeans.** Yellow soybeans shall be any soybeans which have yellow or green seed coats, and which in cross section are yellow or have a yellow tinge, and may include not more than 10.0 percent of soybeans of other classes.

(d) **Green soybeans.** Green soybeans shall be any soybeans which have green seed coats, and which in cross section are green, and may include not more than 10.0 percent of soybeans of other classes.

(e) **Brown soybeans.** Brown soybeans shall be any soybeans with brown seed coats, and may include not more than 10.0 percent of soybeans of other classes.

(f) **Black soybeans.** Black soybeans shall be any soybeans with black seed coats, and may include not more than 10.0 percent of soybeans of other classes.

(g) **Mixed soybeans.** Mixed soybeans shall be any mixture of soybeans which does not meet the requirements of the classes yellow soybeans, green soybeans, brown soybeans, or black soybeans. Bicolored soybeans shall be classified as mixed soybeans.

(h) **Grades.** Grades shall be the U.S. numerical grades, U.S. Sample grade, and special grades provided for in § 26.603.

(i) **Bicolored soybeans.** Bicolored soybeans shall be any soybeans with seed coats of two colors, one of which is black or brown.

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<sup>1</sup>The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act.

(j) **Splits.** Splits shall be pieces of soybeans that are not damaged.

(k) **Damaged kernels.** Damaged kernels shall be soybeans and pieces of soybeans which are heat-damaged, sprouted, frosted, badly ground-damaged, badly weather-damaged, moldy, diseased, stink-bug-stung, or otherwise materially damaged. Stink-bug-stung kernels shall be considered damaged kernels at the rate of one-fourth of the actual percentage of the stung kernels.

(l) **Heat-damaged kernels.** Heat-damaged kernels shall be soybeans and pieces of soybeans which are materially discolored and damaged by heat.

(m) **Foreign material.** Foreign material shall be all matter, including soybeans and pieces of soybeans, which will pass readily through an 8/64 sieve and all matter other than soybeans remaining on such sieve after sieving.

(n) **Stones.** Stones shall be concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

(o) **8/64 sieve.** An 8/64 sieve shall be a metal sieve 0.032 inch thick perforated with round holes 0.125 (8/64) inch in diameter with approximately 4,736 perforations per square foot.

## **§ 26.602 Principles governing application of standards**

The following principles shall apply in the determination of the classes and grades of soybeans:

(a) **Basis of determination.** Each determination of class, splits, damaged kernels, and heat-damaged kernels, and of black, brown, and/or bicolored soybeans in Yellow or Green Soybeans, shall be upon the basis of the grain when free from foreign material. All other determinations shall be upon the basis of the grain as a whole.

(b) **Percentages.** All percentages shall be upon the basis of weight. The percentages of splits shall be expressed in terms of whole percents. All other percentages shall be expressed in terms of whole and tenths percents.

(c) **Moisture.** Moisture shall be ascertained by the air-oven method prescribed by the United States Department of Agriculture, as described in Service and Regulatory Announcement No. 147, issued by the Agricultural Marketing Service, or ascertained by any method which gives equivalent results.

(d) **Test weight per bushel.** Test weight per bushel shall be the weight per Winchester bushel as determined by the method prescribed by the United States Department of Agriculture, as described in Circular No. 921 issued June 1953, or as determined by any method which gives equivalent results.



§ 26.603 Grades, grade requirements, and grade designations

The following grades, grade requirements, and grade designations are applicable under these standards:

Soybeans

(a) Grades and grade requirements for Soybeans. (See also paragraph (c) of this section.)

Grade	Min- imum test weight per bushel	Maximum limits of—						Brown, black and/or bicolored soybeans in yellow or green soybeans
		Damaged kernels				For- eign material	Heat damaged	
		Mois- ture	Splits	Total	Percent			
			Percent	Percent	Percent	Percent	Percent	Percent
U.S. No. 1	56.0	13.0	10.0	2.0	0.2	1.0	1.0	
U.S. No. 2	54.0	14.0	20.0	3.0	0.5	2.0	2.0	
U.S. No. 3 <sup>1</sup>	52.0	16.0	30.0	5.0	1.0	3.0	5.0	
U.S. No. 4 <sup>2</sup>	49.0	18.0	40.0	8.0	3.0	5.0	10.0	
U.S. Sample grade								

U.S. Sample grade shall be soybeans which do not meet the requirements for any of the grades from U.S. No. 1 to U.S. No. 4, inclusive; or which are musty, sour, or heating; or which have any com-  
mercially objectionable foreign odor; or which contain stones; or which are otherwise of dis-  
tinctly low quality.

<sup>1</sup>Soybeans which are purple mottled or stained shall be graded not higher than U.S. No. 3.

<sup>2</sup>Soybeans which are materially weathered shall be graded not higher than U.S. No. 4.

## Grade Designation

(b) **Grade designations for soybeans.** The grade designations for soybeans shall include in the order named, the letters "U.S."; the number of the grade or the words "Sample grades," as the case may be; the name of the class; and the name of each applicable special grade. In the case of mixed soybeans, the grade designation shall also include, following the name of the class, the approximate percentages of yellow, green, brown, black, and bicolored soybeans in the mixture.

(c) **Optional grade designations.** Soybeans may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as "U.S. No. 2 or better Soybeans," "U.S. No. 3 or better Soybeans," etc. The optional grade designation for soybeans shall include the name of the class immediately preceding the word "soybeans" in the grade designation. The special grade designation, when applicable, also shall be included (under certain conditions) <sup>1</sup>in the certification.

## Special Grades for Soybeans

(d) **Special grades, special grade requirements, and special grade designations for soybeans—**(1) **Garlicky soybeans** (i) **Requirements.** Garlicky soybeans shall be soybeans which contain 5 or more garlic bulblets in 1,000 grams.

(ii) **Grade designation.** Garlicky soybeans shall be graded and designated according to the grade requirements of the standards applicable to such soybeans if they were not garlicky and there shall be added to and made a part of the grade designation the word "garlicky."

(2) **Weevily soybeans—**(i) **Requirements.** Weevily soybeans shall be soybeans which are infested with live weevils or other live insects injurious to stored grain.

(ii) **Grade designation.** Weevily soybeans shall be graded and designated according to the grade requirements of the standards applicable to such soybeans if they were not weevily, and there shall be added to and made a part of the grade designation the word "weevily."

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual, GR Instruction 918.6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

## **Interpretations [Added]**

### **§ 26.901 Interpretation with respect the the term “distinctly low quality”**

The term “distinctly low quality,” when used in the United States Standards for Grain, shall be construed to include grain which contains more than two crotalaria seeds (*Crotalaria* spp.) in 1,000 grams of grain.

### **§ 26.902 Interpretation with respect to the term “purple mottled or stained”**

The term “purple mottled or stained,” when used in the United States Standards for Soybeans (see § 26.603(a)) shall be construed to include soybeans which are discolored by the growth of a fungus; or by dirt; or by a dirtlike substance including nontoxic inoculants; or by other nontoxic substances.

### **§ 26.903 Interpretation with respect to the term “Bicolored soybeans”**

The term “bicolored soybeans,” when used in the United States Standards for Soybeans (see § 26.601(i)), shall be construed to include any soybeans with seedcoats of two colors, one of which is black or brown, when the black and/or brown color covers 50 percent or more of the seedcoat. The hilum of a soybean shall not be considered a part of the seedcoat.





## UNITED STATES STANDARDS FOR MIXED GRAIN<sup>1</sup>

### § 26.451 Terms defined

For the purposes of the United States Standards for Mixed Grain:

(a) **Mixed grain.** Mixed grain shall be any mixture of grains for which standards have been established under the United States Grain Standards Act, or any mixture of such grains and wild oats, or wild oats, provided that such mixture does not come within the requirements of any of the standards for such grains, and that such mixture or wild oats does not contain more than 50 percent of foreign material.

(b) **Grades.** Grades shall be "U.S. Mixed Grain," "U.S. No. 1 Mixed Feed Oats," "U.S. No. 2 mixed Feed Oats," "U.S. Sample grade Mixed Grain," and special grades provided for in § 26.453.

(c) **Wild oats.** Wild oats shall be the seeds of *Avena fatua* and *A. sterilis*.

(d) **Cultivated oats.** Cultivated oats shall be the seeds of *Avena sativa* and *A. byzantina*.

(e) **Mixed feed oats.** Mixed feed oats shall be any Mixed Grain which contains not less than 75 percent of wild oats, or not less than 75 percent of wild oats and cultivated oats in combination, which combination shall include more than 25.0 percent of wild oats; and which contains not more than 7.0 percent of foreign material, not more than 15.0 percent of damaged kernels, and not more than 3.0 percent of heat-damaged kernels; and which has a test weight per bushel of not less than 29 pounds.

(f) **Foreign material.** Foreign material shall be all matter except wild oats and grains for which standards have been established under the United States Grain Standards Act.

(g) **Damaged kernels.** Damaged kernels shall be all kernels and pieces of kernels of wild oats and grains for which standards have been established under the United States Grain Standards Act, which are heat damaged, sprouted, frosted, badly ground damaged, badly weather damaged, moldy, diseased, or otherwise materially damaged.

(h) **Heat-damaged kernels.** Heat-damaged kernels shall be kernels and pieces of kernels of wild oats and grains for which

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<sup>1</sup>The specifications of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act.

standards have been established under the United States Grain Standards Act, which have been materially discolored and damaged by heat.

(i) **Stones.** Stones shall be concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

### **§ 26.452 Principles governing application of standards**

The following principles shall apply in the determination of the grades for mixed grain:

(a) **Basis of determination.** All determinations shall be on the basis of the grain as a whole.

(b) **Percentages.** All percentages shall be determined upon the basis of weight. The percentage of each kind of grain, including wild oats, and foreign material shall be stated in terms of whole percents.

(c) **Moisture.** Moisture shall be determined by the air-oven method prescribed by the United States Department of Agriculture as described in Service and Regulatory Announcement No. 147 (1959 revision) issued by the Agricultural Marketing Service for the kind of grain which predominates in the mixture or determined by any method which gives equivalent results.

(d) **Test weight per bushel.** Test weight per bushel shall be the weight per Winchester bushel as determined by the method prescribed by the United States Department of Agriculture as described in Circular No. 921, issued June 1953, or as determined by any method which gives equivalent results.

### **§ 26.453 Grades, grade requirements, and grade designations**

The following grades, grade requirements, and grade designations are applicable under these standards:

(a) **Grades and grade requirements for U.S. Mixed Grain.** (See also paragraph (c) of this section.)

(1) **U.S. Mixed Grain (Grade).** The grade "U.S. Mixed Grain" shall be mixed grain with not more than 15.0 percent of damaged kernels, and not more than 3.0 percent of heat-damaged kernels, and which otherwise does not meet the requirements for mixed feed oats, or the requirements for the grade "U.S. Sample grade Mixed Grain."

(2) **U.S. No. 1 Mixed Feed Oats.** The grade U.S. No. 1 Mixed Feed Oats shall be mixed grain which meets the requirements for mixed feed oats; which contains not more than 5.0 percent of foreign material, not more than 10.0 percent of damaged kernels, and not more than 2.0 percent of heat-damaged kernels; which



has a test weight per bushel of not less than 32 pounds; and which otherwise does not meet the requirements for the grades U.S. Mixed Grain, U.S. No. 2 Mixed Feed Oats, or U.S. Sample grade Mixed Grain.

(3) **U.S. No. 2 Mixed Feed Oats.** The grade U.S. No. 2 Mixed Feed Oats shall be mixed grain which meets the requirements for mixed feed oats; which contains not more than 7.0 percent of foreign material, not more than 15.0 percent of damaged kernels, and not more than 3.0 percent of heat-damaged kernels, which has a test weight per bushel of not less than 29 pounds; and which otherwise does not meet the requirements for the grades U.S. Mixed Grain, U.S. No. 1 Mixed Feed Oats, or U.S. Sample grade Mixed Grain.

(4) **U.S. Sample grade Mixed Grain.** The grade "U.S. Sample grade Mixed Grain" shall be mixed grain which does not meet the requirements for mixed feed oats, or the requirements for the grade U.S. Mixed Grain; or which contains more than 16.0 percent of moisture; or which contains stones; or which is musty, or sour, or heating; or which has any commercially objectionable foreign odor, except of smut or garlic; or which is otherwise of distinctly low quality.

### Grade Designations

(b) **Grade designations for U.S. Mixed Grain.** The grade designation for mixed grain shall include the words "U.S. Mixed Grain," "U.S. No. 1 Mixed Feed Oats," "U.S. No. 2 Mixed Feed Oats," or "U.S. Sample grade Mixed Grain," as the case may be, and the name of each applicable special grade. In the case of the grades "U.S. Mixed Grain" and "U.S. Sample grade Mixed Grain" the grade designation shall also include the name and approximate percentage of each kind of grain, including wild oats, which constitutes 10.0 percent or more of the mixture, in the order of pre-dominance and, when applicable, the words "other grains" followed by a statement of the percentage of the combined quantity of those kinds of grains, including wild oats, each of which is present in a quantity less than 10.0 percent; and the words "Foreign Material" together with a statement of the percentage thereof.

(c) **Optional grade designations.** Mixed grain may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as "U.S. No. 2 or better Mixed Feed Oats," "U.S. Sample Grade or better Mixed Grain," etc. The special grade designation, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual, GR Instruction 918.6. Copies may be obtained from the Inspection Division, Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

### Special Grades for Mixed Grain

**(d) Special grades, special grade requirements, and special grade designations for mixed grain.—(1) Tough mixed grain—(i) Requirements.** Tough mixed grain shall be mixed grain which contains more than 14.0 percent but not more than 16.0 percent of moisture.

**(ii) Grade designation.** Tough mixed grain shall be graded according to the grade requirements of the standards applicable to such mixed grain if it were not tough, and there shall be added to and made a part of the grade designation the word "Tough."

**(2) Smutty mixed grain—(i) Requirements.** Smutty mixed grain shall be (a) mixed grain in which wheat or rye predominates, and which contains balls, portions of balls, or spores, of smut, in excess of a quantity equal to 14 balls of average size in 250 grams of mixed grain, or (b) any other mixed grain which has the kernels covered with smut spores, or which contains smut masses and/or smut balls in excess of 0.2 percent.

**(ii) Grade designation.** Smutty mixed grain shall be graded and designated according to the grade requirements of the standards applicable to such mixed grain if it were not smutty, and there shall be added to and made a part of the grade designation, the word "Smutty."

**(3) Ergoty mixed grain—(i) Requirements.** Ergoty mixed grain shall be mixed grain which contains ergot in excess of 0.3 percent.

**(ii) Grade designation.** Ergoty mixed grain shall be graded and designated according to the grade requirements of the standards applicable to such mixed grain if it were not ergoty, and there shall be added to and made a part of the grade designation, the word "Ergoty."

**(4) Garlicky mixed grain—(i) Requirements.** Garlicky mixed grain shall be (a) mixed grain in which wheat or rye predominates, and which contains 2 or more green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets, in 1,000 grams of mixed grains; or (b) mixed grain in which grains other than wheat and rye predominate, and which contains 4 or more green garlic bulblets, or an equivalent quantity of dry or partly dry bulblets, in 500 grams of mixed grain.

**(ii) Grade designation.** Garlicky mixed grain shall be graded and designated according to the grade requirements of the standards applicable to such mixed grain if it were not garlicky, and there shall be added to and made a part of the grade designation, the word "Garlicky."



**(5) Weevily mixed grain—(i) Requirements.** Weevily mixed grain shall be mixed grain which is infested with live weevils or other insects injurious to stored grain.

**(ii) Grade designation.** Weevily mixed grain shall be graded and designated according to the grade requirements of the standards applicable to such mixed grain if it were not weevily, and there shall be added to and made a part of the grade designation, the word “Weevily.”

**(6) Blighted mixed grain—(i) Requirements.** Blighted mixed grain shall be mixed grain in which barley predominates and which, as a whole, contains more than 4.0 percent of barley damaged or materially discolored by blight and/or mold.

**(ii) Grade designation.** Blighted mixed grain shall be graded and designated according to the grade requirements of the standards applicable to such mixed grain if it were not blighted, and there shall be added to and made a part of the grade designation, the word “Blighted.”

**(7) Treated mixed grain—(i) Requirements.** Treated mixed grain shall be mixed grain which has been scoured, limed, washed, sulfured, or treated in such a manner that its true quality is not reflected by the grade designation “U.S. Mixed Grain,” “U.S. No. 1 Mixed Feed Oats,” “U.S. No. 2 Mixed Feed Oats,” or “U.S. Sample grade Mixed Grain.”

**(ii) Grade designation.** Treated mixed grain shall be graded and designated according to the grade requirements of the standards applicable to such mixed grain if it were not treated, and there shall be added to and made a part of the grade designation, a statement indicating the kind of treatment.

### **Interpretations [Added]**

#### **§ 26.901 Interpretation with respect to the term “distinctly low quality”**

The term “distinctly low quality,” when used in the United States Standards for Grain, shall be construed to include grain which contains more than two crotalaria seeds (*Crotalaria* spp.) in 1,000 grams of grain.





# UNITED STATES STANDARDS FOR TRITICALE<sup>1</sup>

## Terms Defined

### § 26.651 Definition of triticale.

Grain which, before the removal of dockage, consists of 50 percent or more of triticale and may contain not more than 10 percent of other grains for which standards have been established under the United States Grain Standards Act and which, after the removal of dockage, contains 50 percent or more of whole kernels of triticale.

### § 26.652 Definitions of other terms.

For the purposes of these standards, the following terms shall have the meanings stated below:

(a) **Damaged kernels (total).** Kernels, pieces of triticale kernels, and other grains that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged, or otherwise materially damaged in the sample after the removal of dockage and shrunken and broken kernels.

(b) **Defects (total).** Damaged kernels, foreign material, and shrunken and broken kernels. The sum of these three factors may not exceed the limit for the factor "Defects (total)" for each individual grade.

(c) **Distinctly low quality.** Triticale which is obviously of inferior quality because it contains foreign substances or because it is in an unusual state or condition, and which cannot be properly graded by use of the other grading factors provided in the standards. Distinctly low quality shall include any objects too large to enter the sampling device; i.e., large stones, wreckage, etc.

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<sup>1</sup>Compliance with the provisions of these standards does not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or other Federal laws.

(d) **Dockage.** All matter other than tritival which can be removed readily from a test portion of the original sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual.<sup>2</sup> Also, underdeveloped, shriveled, and small pieces of triticales kernels removed in properly separating the material other than triticales and which cannot be recovered by properly rescreening or recleaning. (See also § 26.655 and 26.657.) For the purpose of this paragraph, "approved device" shall include the Carter Dockage Tester and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(e) **Foreign material (total).** All matter other than triticales which remains in the sample after the removal of dockage and shrunken and broken kernels.

(f) **Heat-damaged kernels.** Kernels, pieces of triticales kernels, and other grains that are materially discolored and damaged by heat which remain in the sample after the removal of dockage and shrunken and broken kernels.

(g) **Moisture.** Water content in triticales as determined by an approved device in accordance with procedures prescribed in the Equipment Manual.<sup>2</sup> For the purpose of this paragraph, "approved device" shall include the Motomco Moisture Meter and any other equipment that is approved by the Administrator as giving equivalent results.<sup>3</sup>

(h) **Other grains.** Barley, corn, cultivated buckwheat, einkorn, emmer, flaxseed, guar, hull-less barley, nongrain sorghum, oats, Polish wheat, popcorn, poulard wheat, rice, rye, safflower, sorghum, soybeans, spelt, sunflower, sweet corn, wheat, and wild oats.

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<sup>2</sup>The following publications are referenced in these standards. Copies may be obtained from the Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.

(a) Equipment Manual, GR Instruction 916-6, effective September 25, 1968, as amended, U.S. Department of Agriculture, Agricultural Marketing Service.

(b) Grain Inspection Manual, GR Instruction 918-6, effective August 28, 1972, as amended, U.S. Department of Agriculture, Federal Grain Inspection Service.

<sup>3</sup>Requests for information concerning approved devices and procedures, criteria for approved devices, and request for approval of devices should be directed to the Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue S.W., Washington, D.C. 20250.



(i) **Shrunken and broken kernels.** All matter which can be removed from a test portion of the dockage-free sample by use of an approved device in accordance with procedures prescribed in the Grain Inspection Manual. For the purpose of this paragraph, "approved device" shall be the 0.064 x 3/8 inch oblong-hole sieve.<sup>3</sup>

(j) **Sieve, 0.064 x 3/8 oblong-hole.** A metal sieve 0.032 inch thick with oblong perforations 0.064 inch by 0.375 (3/8) inch.

(k) **Stones.** Concreted earthy or mineral matter and other substances of similar hardness that do not disintegrate readily in water.

(l) **Test weight per bushel.** The weight per Winchester bushel (2,150.42 cubic inch capacity) as determined on a dockage-free test portion of the original sample using an approved device in accordance with instructions in the Grain Inspection Manual. For the purpose of this paragraph, "approved device" shall include the fairbanks-Morse or Ohaus Test Weight per Bushel Apparatus and any other equipment that is approved by the Administrator as giving equivalent results. Test weight per bushel shall be expressed to the nearest tenth of a pound.

## **Principles Governing The Application Of The Standards**

### **§ 26.653 Basis of determination.**

(a) **Distinctly low quality.** The determination of distinctly low quality shall be made on the basis of the lot as a whole at the time of sampling when a condition exists that may not appear in the representative sample and/or the sample as a whole.

(b) **Certain quality determinations.** Each determination of rodent pellets, bird droppings, other animal filth, broken glass, castor beans, crotalaria seeds, dockage, garlic, live weevils or other insects injurious to stored grain, moisture, odor, temperature, an unknown foreign substance, and a commonly recognized harmful or toxic substance shall be upon the basis of the sample as a whole.

(c) **All other determinations.** All other determinations shall be upon the basis of the grain when free from dockage; except that the determination of heat-damaged kernels, damaged kernels (total), material other than wheat or rye, and foreign material (total) shall be upon the basis of the grain when free from dockage and shrunken and broken kernels.

**§ 26.654 Temporary modifications in equipment and procedures.**

The equipment and procedures referred to in the triticales standards are applicable to triticales produced and harvested under normal environmental conditions. Abnormal environmental conditions during the production and harvesting of triticales may require minor temporary modifications in the equipment or procedures to obtain results expected under normal conditions. When these adjustments are necessary, Federal Grain Inspection Service Field Offices, official inspection agencies, and interested parties in the grain trade will be notified promptly in writing of the modification. Adjustments in interpretations (i.e., identity, quality, and condition) are excluded and shall not be made.

**§ 26.655 Percentages.**

(a) Percentages shall be determined on the basis of weight and shall be rounded off as follows:

(1) When the figure to be rounded is followed by a figure greater than 5, round to the next higher figure; e.g., state 0.46 as 0.5.

(2) When the figure to be rounded is followed by a figure less than 5, retain the figure; e.g., state 0.54 as 0.5.

(3) When the figure to be rounded is even and it is followed by the figure 5, retain the even figure. When the figure to be rounded is odd and it is followed by the figure 5, round the figure to the next higher number; e.g., state 0.45 as 0.4; state 0.55 as 0.6.

(b) Percentages shall be stated in whole and tenth percent to the nearest tenth percent, except when determining the identity of triticales and the percentage of dockage and ergot. The percentage when determining the identity of triticales shall be stated to the nearest whole percent. The percentage of dockage when equal to one-half percent or more shall be stated in terms of half percent, whole percent, or whole and half percent, as the case may be, with other fractions disregarded as shown in the following examples: Dockage ranging from 0.5 to 0.9 percent shall be expressed as 0.5 percent, from 1.0 to 1.4 percent as 1.0 percent, from 1.5 to 1.9 percent as 1.5 percent, etc. The percentage of ergot shall be stated to the nearest hundredth percent.

**Grades, Grade Requirements, And  
Grade Designations****§ 26.656 Grades and grade requirements for triticales.**

(See also § 26.658.)

## § 26.657 Grade designations.

(a) **Grade designations for triticales.** The grade designations for triticales shall include in the following order: (1) the letters "U.S."; (2) the number of the grade or the words "Sample grade"; (3) the word "triticales"; (4) each applicable special grade (see also § 26.659); and (5) when applicable, the word "dockage" together with the percentage thereof.

(b) **Optional grade designations.** Triticales may be certificated (under certain conditions<sup>1</sup>), when supported by official analysis, as "U.S. No. 2 or better Triticales," "U.S. No. 3 or better Triticales," etc. The special grade designations and dockage, when applicable, also shall be included (under certain conditions<sup>1</sup>) in the certification.

### Special Grades, Special Grade Requirements, And Special Grade Designations

## § 26.658 Special grades and special grade requirements.

A special grade when applicable, supplemental to the grade assigned under § 26.656. Such special grades are established and determined as follows:

(a) **Ergoty triticales.** Triticales which contains more than 0.10 percent of ergot.

(b) **Light garlicky triticales.** Triticales which contains in a 1,000-gram portion two or more, but not more than six, green garlic bulblets, or an equivalent quantity of dry and partly dry bulblets.

(c) **Garlicky triticales.** Triticales which contains in a 1,000-gram portion more than six green garlic bulblets or an equivalent quantity of dry or partly dry bulblets.

(d) **Light smutty triticales.** Triticales which has an unmistakable odor of smut, or which contains in a 250-gram portion smut balls, portions, of smut balls, or spores of smut in excess of a quantity equal to 14 smut balls, but not in excess of a quantity equal to 30 smut balls of average size.

(e) **Smutty triticales.** Triticales which contains in a 250-gram portion smut balls, portions of smut balls, or spores of smut in excess of a quantity equal to 30 smut balls of average size.

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<sup>1</sup>The conditions are listed in the Grain Inspection Manual. GR Instruction 912-6 copies may be obtained from the Inspection Division Federal Grain Inspection Service, U.S. Department of Agriculture, 1400 Independence Avenue, S.W., Washington, D.C. 20250.



Grade	Maximum limits of—					
	Min- imum test weight per bushel	Damaged kernels		Foreign material		Defects (total) <sup>3</sup>
		Heat- damaged	Total <sup>1</sup>	Material other than wheat or rye	Total <sup>2</sup>	Shrunken and broken kernels
		Percent	Percent	Percent	Percent	Percent
U.S. No. 1	48.0	0.2	2.0	1.0	2.0	5.0
U.S. No. 2	45.0	0.2	4.0	2.0	4.0	8.0
U.S. No. 3	43.0	0.5	8.0	3.0	7.0	12.0
U.S. No. 4	41.0	3.0	15.0	4.0	10.0	20.0
U.S. Sample grade						
U.S. Sample grade shall be triticale which;						
(a) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, or 4; or						
(b) Contains a quantity of smut so great that one or more of the grade requirements cannot be determined accurately; or						
(c) Contains 8 or more stones, 2 or more pieces of glass, 3 or more crotalaria seeds ( <i>Crotalaria</i> spp.), 3 or more castor beans ( <i>Ricinus communis</i> ), 4 or more particles of an unknown foreign substance(s) or a commonly recognized harmful or toxic substance(s), or 2 or more rodent pellets, bird droppings; or an equivalent quantity of other animal filth per 1,000 grams of triticale; or						
(d) Has a musty, sour, or commercially objectionable foreign odor (except smut or garlic odor); or						
(e) Is heating or otherwise of distinctly low quality.						

<sup>1</sup>Includes heat-damaged kernels.  
<sup>2</sup>Includes material other than wheat or rye.  
<sup>3</sup>Defects (total) includes damaged kernels (total), foreign material (total) and shrunken and broken kernels.  
The sum of these three factors may not exceed the limit for "defects (total)" for each numerical grade.

(f) **Weevily triticales.** Triticale which is infested with live weevils or other insects injurious to stored grain. As applied to triticales, the meaning of the term “infested” is set forth in the Grain Inspection Manual.<sup>2</sup>

### **§ 26.659 Special grade designations.**

Special grade designations shall be made in addition to all other information prescribed in § 26.657. The grade designation for ergoty, light garlicky, garlicky, light smutty, smutty, and weevily triticales shall include in the order listed, following the word Triticale, the word(s) “Ergoty,” “Light garlicky,” “Garlicky,” “Light smutty,” “Smutty,” and “Weevily,” as warranted.

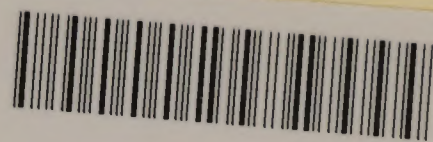
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